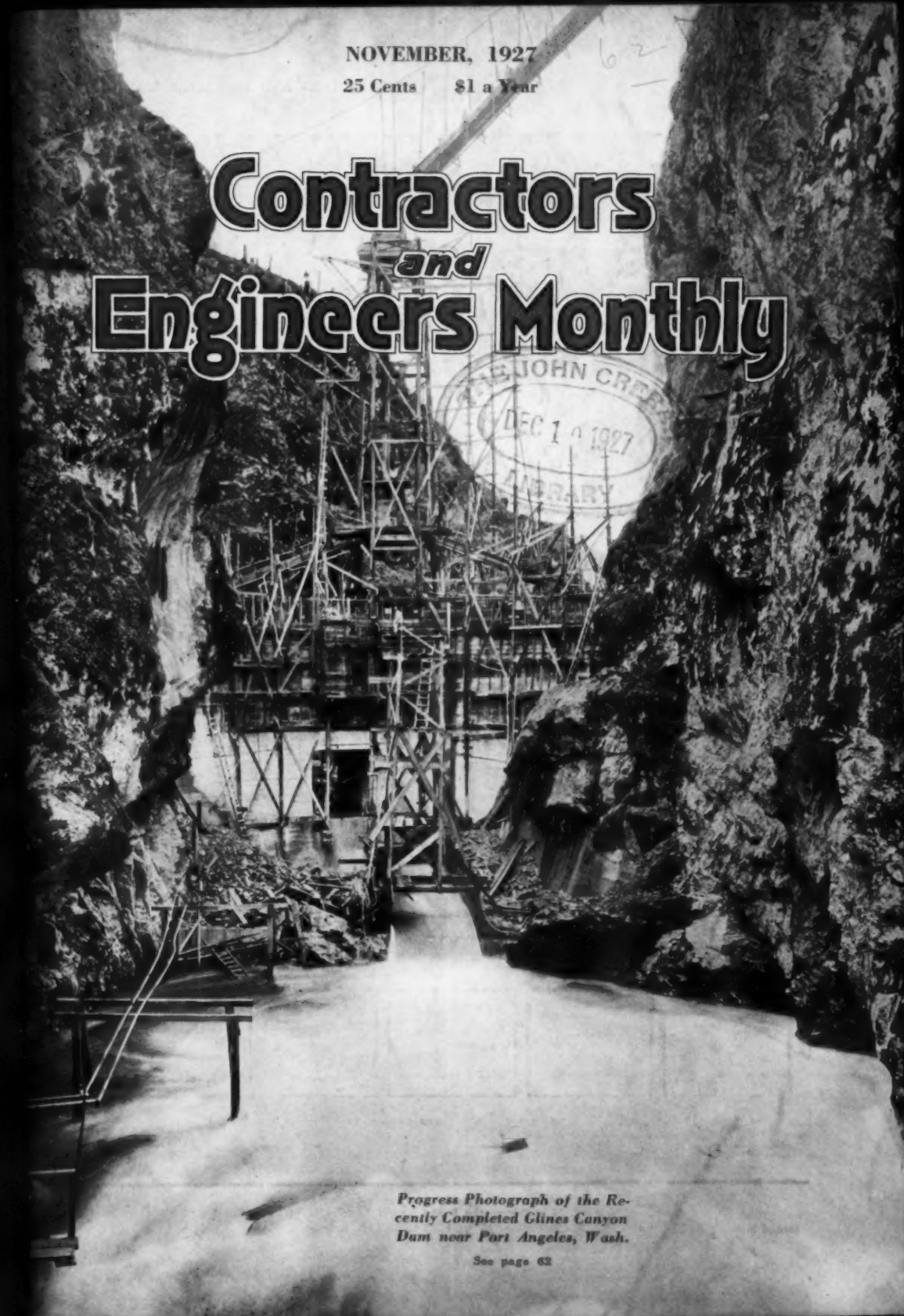


NOVEMBER, 1927

25 Cents \$1 a Year

# Contractors and Engineers Monthly



Progress Photograph of the Recently Completed Glines Canyon Dam near Port Angeles, Wash.

See page 62

# The General

**FULL  
CIRCLE  
SWING!**

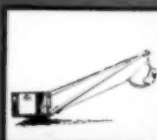
**GAS OR ELECTRIC**

*"years of  
experience  
back of it"*

Years of continuous engineering experience have been built into the "General." Simplicity and convenience reign throughout. Built up of steel castings. Fast. Mobile. Powerful. Economical. One-man operation. Easily and quickly changed in the field to a Shovel, Skimmer, Crane, Dragline, Clamshell or Back-hoe.

Bulletin 2703 tells "General's" complete history. Send for your copy.

**THE GENERAL EXCAVATOR CO., Marion, Ohio, U.S.A.**



*Here is the General's Staff*

AEI  
\*A  
B  
H  
A  
AIR  
\*A  
\*B  
\*C  
\*C  
\*D  
\*G  
\*N  
\*O  
\*S  
\*S  
\*S  
All  
B  
C  
C  
C  
D  
F  
G  
H  
I  
I  
I  
I  
N  
N  
N  
S  
U  
W  
me  
W  
AIR CO  
\*C  
\*D  
per  
Ingr  
AEC L  
Gener  
West  
E.  
ARTES  
\*Star  
Am. V  
Ingr  
ARREST  
\*Philip  
K  
Mike  
Norris  
town  
Ball M  
ASH HAI  
\*Cham



# Where to Purchase

A comprehensive classification of the leading machinery and supply manufacturers arranged for the convenience of contractors, engineers and public officials who may wish to secure information about construction equipment. The Index to Advertisers faces the inside back cover. When writing to advertisers please mention the **CONTRACTORS' & ENGINEERS' MONTHLY**. A star (\*) before the manufacturer's name indicates that his advertisement appears in this issue.

This index is published as an aid to the reader, but the publishers assume no responsibility for errors or omissions.

## AERIAL WIRE ROPE TRAMWAYS

- \*Amer. Steel & Wire Co., Chicago
- Broderick & Bascom Rope Co., St. Louis
- Hasard Mfg. Co., Wilkesbarre, Pa.
- A. Leschen & Sons Rope Co., St. Louis

## AIR COMPRESSORS

- \*American Steam Pump Co., Battle Creek, Mich.
- \*Buhl Co., Chicago
- \*Cement-Gun Co., Allentown, Pa.
- \*Cook Motor Co., Delaware, O.
- \*Domestic Eng. & Pump Co., Shippensburg, Pa.
- \*Gardner-Denver Co., Denver, Col.
- \*New Engine Co., Lansing, Mich.
- \*O. K. Clutch & Mach. Co., Columbia, Pa.
- \*Stover Mfg. & Eng. Co., Freeport, Ill.
- \*Sullivan Mch. Co., Chicago
- Allis-Chalmers Mfg. Co., Milwaukee
- Barnes Mfg. Co., Mansfield, O.
- Chicago Pneumatic Tool Co., N. Y.
- Curtis Pn. Mch. Co., St. Louis, Mo.
- De Laval Sim. Turb. Co., Trenton, N. J.
- Fairbanks, Morse & Co., Chicago
- General Elec. Co., Schenectady, N. Y.
- Hardie-Tynes Mfg. Co., Birmingham, Ala.
- Independent Pneum. Tool Co., Chicago
- Indiana Air Pump Co., Ind'polis, Ind.
- Ingersoll-Rand Co., N. Y.
- Nordberg Mfg. Co., Milwaukee
- Norwalk Ir. Wks. Co., So. Norwalk, Ct.
- Schramm, Inc., West Chester, Pa.
- United Iron Wks., Kansas City, Mo.
- Westinghouse Trac. Brake Co., Wheeling, Pa.
- Worthington Pump & Mch. Corp., N.Y.

## AIR COMPRESSORS, PORTABLE

- \*Cement-Gun Co., Allentown, Pa.
- \*Domestic Engine & Pump Co., Shippensburg, Pa.
- Ingersoll-Rand Co., N. Y.

## ARC LAMPS

- General Elec. Co., Schenectady, N. Y.
- Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

## ARTESIAN WELL DRILLS & PUMPS

- \*Star Drilling Mach. Co., Akron, O.
- Am. Well Works, Aurora, Ill.
- Ingersoll-Rand Co., New York

## ASBESTOS PRODUCTS

- \*Philip Carey Co., Cincinnati
- Keasbey & Mattison Co., Ambler, Pa.
- Milnesell Bros. Co., Wabash, Ind.
- Norristown Mag. & Ash Co., Norris-town, Pa.
- Sail Mountain Co., Chicago

## ASH HANDLING MACHINERY

- \*Chain Belt Co., Milwaukee

## \*Chicago Automatic Conv. Co., Chicago

- \*Erie Steam Shovel Co., Erie, Pa.
- \*Geo. Halsey Mfg. Co., N. Y.
- \*Mack Trucks, Inc., N. Y.
- \*Lakewood Eng. Co., Cleveland, O.
- \*Link-Belt Co., Chicago
- \*Mead-Morrison Mfg. Co., E. Boston, Mass.
- \*Orton Crane & Shovel Co., Chicago
- Atia-Corp., New York
- C. O. Bartlett & Snow Co., Cleveland, O.
- Brown Hoisting Mach. Co., Cleveland, O.
- Byers Mach. Co., Ravenna, O.
- Gifford-Wood Co., Hudson, N. Y.
- Green Eng. Co., E. Chicago, Ind.
- Jeffrey Mfg. Co., Columbus, O.
- Portable Mach. Co., Clifton, N. J.
- Robins Conv. Belt Co., N. Y.
- Jas. B. Seaverns Co., Batavia, Ill.
- Webster Mfg. Co., Chicago
- Weller Mfg. Co., Chicago

## ASPHALT

- \*Barber Asphalt Co., Philadelphia
- \*Barrett Co., N. Y.
- \*Standard Oil Co. (Ind.), Chicago
- \*Standard Oil Co. (N. Y.), N. Y.
- \*Warren Bros. Co., Boston
- Atlantic Ref. & Asph. Corp., Phila.
- Gulf Refining Co., Pittsburgh
- Ky. Rock Asph. Co., Louisville, Ky.
- Natural Rk. Asph. Corp., Owneboro, Ky.
- New Orleans Ref. Co., New Orleans
- Pioneer Asph. Co., Lawrenceville, Ill.
- Sinclair Ref. Co., Chicago
- Standard Oil Co. of Cal., S. Francisco
- Standard Oil Co. of La., N. Orleans
- Standard Oil Co. of N. J., Newark
- Texas Co., N. Y.

## ASPHALT BLOCK

- Hastings Pavement Co., N. Y.

## ASPHALT BRICK

- Asphalt Brick Co., St. Louis

## ASPHALT CUTTERS

- \*Gardner-Denver Co., Denver, Col.
- \*Littleford Bros., Cincinnati
- \*Sullivan Machinery Co., Chicago
- Chicago Pneumatic Tool Co., N. Y.
- Cleveland Rock Drill Co., Cleveland, O.
- Dayton Pneum. Tool Co., Dayton, O.
- Independent Pn. Tool Co., Chicago, Ill.
- Ingersoll-Rand Co., N. Y.

## ASPHALT KETTLES (See Kettles for Asphalt and Tar Heating)

## ASPHALT PLANTS, TOOLS, ETC.

- \*Aeroli Burner Co., West New York, N.J.
- \*Barber Asphalt Co., Philadelphia
- \*Littleford Bros., Cincinnati, O.
- \*Warren Bros. Co., Boston

- American Fin-Mix Co., Chicago, Ill.
- Chaussee Oil Burner Co., Elkhart, Ind.
- F. D. Cummer & Son Co., Cleveland, O.
- J. D. Faraway Mfg. Co., Cleveland, O.
- Hetherington & Herner, Indianapolis
- Hauck Mfg. Co., Bklyn, N. Y.
- Merriman Asphalt Plant, Inc., Lima, O.
- Mosher Mfg. Co., Chicago, Ill.

## ASPHALT ROLLERS (See Road Rollers)

## ASPHALT SURFACE HEATERS

- \*Aeroli Burner Co., West New York, N.J.
- \*Barber Asphalt Co., Philadelphia
- Chaussee Oil Burner Co., Elkhart, Ind.
- Equitable Asp. Maint. Co., Kan. C., Mo.
- Good Roads Equip. Corp., Phila.
- Hauck Mfg. Co., B'klyn, N. Y.

## BACKFILLERS

- \*Baker Mfg. Co., Springfield, Ill.
- \*Bay City Dredge Wks., Bay City, Mich.
- \*Buckeye Trac. Ditcher Co., Findlay, O.
- \*Erie Steam Shovel Co., Erie, Pa.
- \*Ersted Mch. Mfg. Co., Portland, Ore.
- \*Koehring Co., Milwaukee, Wis.
- \*LaPlant-Chaste Mfg. Co., Cedar Rapids, Iowa
- \*Link-Belt Co., Chicago
- \*Miami Trailer Scraper Co., Troy, O.
- \*Orton Crane & Shovel Co., Chicago
- \*Parsons Co., Newton, Ia.
- \*Speeder Mch. Corp., Cedar Rapids, Ia.
- \*Star Drilling Mach. Co., Akron, O.
- \*Waterman Corp., Detroit
- Austin Mach. Corp., Muskegon, Mich.
- Byers Machine Co., Ravenna, O.
- Construction Mch. Co., Waterloo, Ia.
- Harnischfeger Corp., Milwaukee, Wis.
- Leaman Loader Mfg. Co., Des Moines
- Weller Mfg. Co., Chicago

## BAGS

- \*Bates Valve Bag Co., Chicago

## BAR ENDERS AND CUTTERS

- \*Koehring Co., Milwaukee, Wis.
- \*Ransome Conc. Mch. Co., Dunellen, N.J.
- Buffalo Forge Co., Buffalo, N. Y.
- Concrete Steel Co., N. Y.
- Electric Welding Co., Pittsburgh
- D. A. Hinman & Co., Sandwich, Ill.
- J. L. Gleason & Co., Boston, Mass.
- McKenna Co., Cleveland, O.

## BAR CHAIRS, REINFORCING

- \*Trascon Steel Co., Youngstown, O.
- Concrete Steel Co., N. Y.
- Universal Form Clamp Co., Chicago

## BAR TIES

- \*Bates Valve Bag Co., Chicago

## BATCH BOXES

- \*Blaw-Knox Co., Pittsburgh, Pa.
- \*Holtzel Stl. Form & Ir. Co., Warren, O.

**For Leading Local Distributors of Contractors' Equipment in Each State, See Directory on pages 151 to 189.**

# Where to Purchase

\*Jos. Henherst Co., Cincinnati  
 \*Lakewood Eng. Co., Cleveland, O.  
 \*Lathford Bros., Cincinnati.  
 Easton Car & Const'n. Co., Easton, Pa.  
 Easton Car & Const'n. Co. of Mo.,  
 Kansas City, Mo.  
 Erie Steel Const. Co., Erie, Pa.  
 Koppel Ind. Car & Equip. Co., Koppel,  
 Pa.  
 Jas. B. Seaverns Co., Batavia, Ill.  
 Western Wheeled Scraper Co., Aurora,  
 Ill.

## BEARINGS

Fafnir Bearing Co., New Britain, Conn.  
 Hyatt Roller Bear. Co., Harrison, N. J.  
 New Departure Mfg. Co., Bristol, Conn.  
 S. K. F. Industries, New York.  
 Timken Roller Bearing Co., Canton, O.

## BINS, STORAGE

\*Austin-Western Rd. Mach. Co., Chicago.  
 \*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Gallon Iron Wks. & Mfg. Co., Gallon, O.  
 \*Good Roads Mch. Co., Kennett Sq., Pa.  
 \*Heitzel Sil. Form & Ir. Co., Warren, O.  
 \*Link-Belt Co., Chicago.  
 \*Ransome Conc. Mch. Co., Dunellen, N.J.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 Austin Mfg. Co., Chicago.  
 Birmingham Tank Co., Birmingham, Ala.  
 Brown Hoisting Mach. Co., Cleveland.  
 Butler Bin Co., Waukesha, Wis.  
 Canton Art Metal Co., Canton, O.  
 Easton Car & Const. Co., Easton, Pa.  
 Erie Steel Const. Co., Erie, Pa.  
 Fairfield Eng. Co., Marion, O.  
 C. E. Johnson Co., Champaign, Ill.  
 Pittsburgh-Des Moines Steel Co., Pitts-  
 burgh, Pa.  
 Jas. B. Seaverns Co., Batavia, Ill.  
 Universal Rd. Mach. Co., Kingston, N.Y.  
 Weller Mfg. Co., Chicago.

## BLADES FOR GRADERS & SNOW FLOWS

\*Gallon Iron Wks. & Mfg. Co., Gallon, O.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 J. D. Adams & Co., Indianapolis.  
 Shank Mfg. Co., Bucyrus, O.

## BLAST HOLE DRILLING MACHINES (See Well Drilling and Blast Hole Machines)

## BLASTING ACCESSORIES

E. I. du Pont de Nemours & Co., Wil-  
 mington.  
 Hercules Powder Co., Wilmington.

## BLASTING POWDER (See Explosives)

## BLOCKS AND TACKLE

\*Boston & Lockport Bk. Co., E. Boston,  
 Mass.  
 \*Debbie Fdry. & Mach. Co., Niagara  
 Falls, N. Y.  
 \*Western Block Co., Lockport, N. Y.

## BLOW TORCHES

\*Everhot Mfg. Co., Maywood, Ill.

## BLUE PRINT MACHINES

Paragon Mach. Co., Rochester, N. Y.  
 C. F. Pease Co., Chicago.  
 Wickes Bros., Saginaw, Mich.

## BODIES; SPECIAL FORD

Anthony Co., Streator, Ill.  
 Standard Comm. Body Corp., B'klyn.

## BOILERS

\*Johnston Bros., Inc., Ferrysburg, Mich.  
 Chandler & Taylor Co., Indianapolis.  
 Chatta. Boiler & Tank Co., Chatta., Tenn.  
 E. D. Cole Mfg. Co., Newnan, Ga.  
 Combustion Eng. Corp., N. Y.  
 Erie City Iron Wks., Erie, Pa.  
 Hartley Br. Wks., Montgomery, Ala.  
 Heine Boiler Co., St. Louis, Mo.  
 E. Keeler Co., Williamsport, Pa.  
 Ladd Water Tube Br. Co., P'tsb'gh, Pa.  
 V. Lefel & Co., Springfield, O.  
 Lord & Burnham Co., Irvington, N. Y.

Murray Iron Wks. Co., Burlington, Ia.  
 Nagle Eng. & Br. Wks., Erie, Pa.  
 New Bern Iron Wks. & Sup. Co., New  
 Bern, N. C.  
 Petroleum Iron Wks. Co., Sharon, Pa.  
 J. S. Scheffeld's Sons Co., Macon, Ga.  
 Stanwood Corp., Cincinnati, O.  
 Superior Body Corp., Marion, Ind.  
 Vogt Mch. Co., Inc., Louisville, Ky.  
 Walsh & Weidner Br. Co., Chattanooga,  
 Tenn.

## BRACES, TERNON

\*Hawley Mfg. Co., Chicago.  
 \*Templeton, Keady & Co., Chicago.  
 Jas. H. Channon Mfg. Co., Chicago.  
 Duff Mfg. Co., Pittsburgh, Pa.  
 Kalamazoo Fdry. & Mach. Co., Kala-  
 mazoo, Mich.  
 Waldo Bros. & Bond Co., Boston.

## BRANDING TOOLS

\*Everhot Mfg. Co., Maywood, Ill.

## BRASS GOODS

\*Union Water Meter Co., Worcester, Mass.  
 Glauber Brass. Mfg. Co., Cleveland, O.  
 Haydensville Co., Haydensville, Mass.  
 Hays Mfg. Co., Erie, Pa.  
 Mueller Company, Decatur, Ill.  
 United-Obendorf Corp., Cleveland, O.

## BREAKERS, CONCRETE

\*Buckeye Trac. Ditcher Co., Findlay, O.  
 \*Gardner-Denver Co., Denver, Col.  
 \*Hardseag Wender Drill Co., Ottumwa, Ia.  
 \*Sullivan Machy. Co., Chicago.  
 Chicago Pneumatic Tool Co., N. Y.  
 Cleveland Rock Drill Co., Cleveland, O.  
 Independent Pa. Tool Co., Chicago.  
 Ingersoll-Mand Co., N. Y.

## BRICK, PAVING (See Paving Brick)

## BRICK CLEANING MACHINES

Elgin Gas Motor Co., Elgin, Ill.  
 Rotor Air Tool Co., Cleveland.

## BRIDGES, CONCRETE

\*Frederick Snare Corp., New York

## BRIDGES AND BUILDINGS, STEEL

\*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Frederick Snare Corporation, N. Y.  
 American Bridge Co., N. Y.  
 Bellefontaine Br. & Sil. Co., Belle-  
 fontaine, O.  
 Belmont Iron Wks., Phila.  
 Berlin Constr. Co., Berlin, Conn.  
 Bethlehem Steel Co., Bethlehem, Pa.  
 Boston Bridge Wks., Boston.  
 Central States Br. Co., Ind'polis, Ind.  
 Champion Bridge Co., Wilmington, O.  
 Chesapeake Ir. Wks., Baltimore, Md.  
 Clinton Bridge Wks., Clinton, Ia.  
 Eastern Bridge & Sirc., Worcester,  
 Mass.  
 Flour City Orn. Iron Co., Minneapolis.  
 Fort Pitt Br. Wks., Pittsburgh, Pa.  
 Hughes-Keenan Co., Mansfield, O.  
 Ingalls Ir. Wks. Co., Birmingham, Ala.  
 Inter. Sil. & Ir. Co., Evansville, Ind.  
 Lakeside Br. & St. Co., No. Milwaukee.  
 Louisville Br. & Ir. Co., Louisville, Ky.  
 McClintic Marshall Co., Pittsburgh, Pa.  
 Milwaukee Br. Co., Milwaukee, Wis.  
 Minn. Sil. & Mch. Co., Minneapolis.  
 Missouri Vy. Br. & Ir. Co., Leaven-  
 worth, Kan.  
 Mt. Vernon Br. Co., Mt. Vernon, O.  
 Penn. Bridge Co., Beaver Falls, Pa.  
 Pittsburgh-Des Moines Sil. Co., Pitts-  
 burgh, Pa.  
 Richmond Struc. Sil. Co., Richmond,  
 Va.  
 Riverside Br. Co., Martins Ferry, O.  
 Virginia Br. & Ir. Co., Roanoke, Va.  
 Wisc. Br. & Ir. Co., No. Milwaukee, Wis.

## BROONZ TABLETS

Flour City Orn. Ir. Co., Minneapolis.  
 Imperial Brass Mfg. Co., Chicago.  
 J. L. Mott Iron Wks., N. Y.

## BROOMS (See Street Sweeping Brooms)

## BUCKETS, AUTOMATIC DUMPING

\*Lakewood Eng. Co., Cleveland, O.  
 \*Union Iron Wks., Inc., Hoboken, N. J.  
 G. L. Stuebner Ir. Wks., Inc., Long  
 Island City, N. Y.

## BUCKETS, CLAM SHELL

\*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Geo. Haise Mfg. Co., N. Y.  
 \*J. F. Kiesler Co., Chicago.  
 \*Lakewood Eng. Co., Cleveland, O.  
 \*Link-Belt Co., Chicago.  
 \*Mead-Morrison Mfg. Co., E. Boston, Mass.  
 \*Orton Crane & Shovel Co., Chicago.  
 Brown Hoisting Mach. Co., Cleveland, O.  
 Buffalo Hat. & Der. Co., Buffalo, N. Y.  
 Browning Crane Co., Cleveland, O.  
 F. A. Coleman Co., Cleveland, O.  
 Erie Steel Const. Co., Erie, Pa.  
 Hayward Co., N. Y.  
 Industrial Wks., Bay City, Mich.  
 McMyler Interstate Co., Cleveland, O.  
 Owen Bucket Co., Cleveland, O.  
 Page Eng. Co., Chicago.  
 G. H. Williams Co., Erie, Pa.

## BUCKETS, CONCRETE

\*Indey Mfg. Co., Indianapolis, Ind.  
 \*Lakewood Eng. Co., Cleveland, O.  
 \*Ransome Conc. Mch. Co., Dunellen,  
 N. J.  
 \*Union Iron Works, Inc., Hoboken, N. J.  
 Koppel Ind. Car & Equip. Co., Koppel, Pa.  
 G. L. Stuebner Ir. Wks., Inc., Long  
 Island City, N. Y.

## BUCKETS, DRAGLINE

\*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Debbie Fdry. & Mch. Co., Niagara  
 Falls, N. Y.  
 \*Gallon Ir. Wks. & Mfg. Co., Gallon, O.  
 \*Link-Belt Co., Chicago.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 \*Sauerman Bros., Chicago.  
 Beach Mfg. Co., Charlotte, Mich.  
 R. H. Beaumont Co., Philadelphia  
 Monaghan Mach. Co., Chicago.  
 Page Eng. Co., Chicago.  
 Pioneer Bucket Co., Indianapolis, Ind.

## BUCKETS, DREDGING AND EXCAVATING

\*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Geo. Haise Mfg. Co., N. Y.  
 \*J. F. Kiesler Co., Chicago.  
 \*Lakewood Eng. Co., Cleveland, O.  
 \*Link-Belt Co., Chicago.  
 \*Mead-Morrison Mfg. Co., E. Boston, Mass.  
 \*Orton Crane & Shovel Co., Chicago.  
 Brown Hoisting Mach. Co., Cleveland, O.  
 Browning Crane Co., Cleveland, O.  
 Hayward Co., N. Y.  
 Owen Bucket Co., Cleveland, O.  
 G. H. Williams Co., Erie, Pa.

## BUCKETS, ORANGE PEEL

\*J. F. Kiesler Co., Chicago.  
 \*Link-Belt Co., Chicago.  
 \*Mead-Morrison Mfg. Co., E. Boston, Mass.  
 \*Orton Crane & Shovel Co., Chicago.  
 Hayward Co., N. Y.  
 Industrial Wks., Bay City, Mich.  
 McMyler Interstate Co., Cleveland, O.

## BUILDING FORMS (See Forms, Conc.)

## BUILDING, STEEL (See Bridges)

## BULLDOZERS

\*LaPlant-Chaste Mfg. Co., Cedar Rapids,  
 Iowa

## BUNKS AND COTS

Ft. Pitt Bedding Co., Pittsburgh, Pa.  
 Haggard & Marcellon Co., Chicago.  
 Southern Rome Co., Baltimore, Md.

## CABLES (See Wire and Cable)

## CABLEWAYS, DRAGLINE

\*J. Flory Mfg. Co., Bangor, Pa.  
 \*Link-Belt Co., Chicago.  
 \*Mead-Morrison Mfg. Co., E. Boston, Mass.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 \*Sauerman Bros., Chicago.  
 Street Bros. Mach. Wks., Chattanooga.

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*

# CONCRETE *PLUS* REINFORCING MEANS BETTER ROADS



Truscon Welded Steel Fabric increases road life and cuts maintenance costs. Stronger than additional thickness of concrete. Withstands heavy traffic. Preserves road surface. Easy to handle. Inexpensive in first cost. Economical to place.

Truscon furnishes a complete line of products for reinforcing concrete roads, driveways, etc. They are designed for ease of handling, speed of construction, permanence and economy.

*You'll find the complete story in our new handbook "Modern Road Construction." Write for a free copy.*

## TRUSCON

TRUSCON STEEL CO., Youngstown, Ohio

Established 1903

*Warehouses and Offices in all Principal Cities*

*Visit our Exhibit at the Annual Road Convention of the American Road Builders Association in Cleveland, January 9 to 13, 1928*

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

### TRUSCON

PRODUCTS FOR  
REINFORCING  
ROADS AND PAVEMENTS



WELDED STEEL FABRIC



CONTRACTION JOINTS



STEEL ROAD FORMS



RIB BARS



CURB BARS



EXPANDED METAL

Welded Steel Fabric for Permanency

Contraction Joints . . . . . for Safety

Steel Road Forms . . . . . for Economy

Rib Bars . . . . . for Reinforcing

Curb Bars . . . . . for Protection

# Where to Purchase

## CARS FOR MOTOR TRUCKS

Highland Body Mfg. Co., Cincinnati, O.  
Weatherproof Body Corp., Corunna, Mich.

## CAISSONS

American Bridge Co., N. Y.  
Biggs Beller Wks., Akron, O.  
Birmingham Tank Co., Birmingham, Ala.  
Foundation Co., N. Y.  
Bethlehem Steel Co., Bethlehem, Pa.  
O'Rourke Eng. Constr. Co., N. Y.  
Petroleum Tr. Wks. Co., Sharon, Pa.

## CALCIUM CHLORIDE FOR ROADS

\*Dow Chemical Co., Midland, Mich.  
\*Solvay Sales Corp., New York.  
Carbondale Calcium Co., Carbondale, Pa.

## CANS FOR GARBAGE AND REFUSE

American Can Co., N. Y.  
Butler Mfg. Co., Minneapolis.  
Canton Art Metal Co., Canton, O.  
Economy Baler Co., Ann Arbor, Mich.  
Rochester Can Co., Rochester, N. Y.  
Solar-Sturges Mfg. Co., Melrose Pk., Ill.  
Steel Basket Co., Cedar Rapids, Ia.

## CAR UNLOADERS (See Loaders)

## CARS, INDUSTRIAL V. DUMPING

\*Insley Mfg. Co., Indianapolis, Ind.  
\*Lakewood Eng. Co., Cleveland, O.  
Atlas Car & Mfg. Co., Chicago.  
Chase Fdry. & Mfg. Co., Columbus, O.  
Easton Car & Const. Co., Easton, Pa.  
C. W. Hunt Co., W. New Brighton, N.Y.  
Koppel Ind. Car & Equip. Co., Koppel, Pa.  
G. L. Stuebner Jr. Wks., Inc., Long Island City, N. Y.  
United Ir. Wks. Inc., Kans. City, Mo.  
Weller Mfg. Co., Chicago.  
Whiting Corp., Harvey, Ill.

## CARTS, CONCRETE

\*General Wheelbarrow Co., Cleveland, O.  
\*Insley Mfg. Co., Indianapolis, Ind.  
\*Lakewood Eng. Co., Cleveland, O.  
\*Ransome Conc. Mch. Co., Dunellen, N.J.  
\*Sterling Wheelbarrow Co., Milwaukee  
\*Toledo Wheelbarrow Co., Toledo, O.  
Chattanooga Wheelbarrow Co., Chattanooga, Tenn.  
Cleveland Wheelbarrow Co., Cleveland, O.  
Easton Car & Const. Co., Easton, Pa.  
E. D. Etnyre & Co., Oregon, Ill.  
Gray Iron Fdry. Co., Reading, Pa.  
Jackson Mfg. Co., Harrisburg, Pa.  
Lansing Co., Lansing, Mich.  
Lee Trailer & Body Co., Plymouth, Ind.

## CAST IRON PIPE (See Pipe, Cast Iron)

## CASTINGS, STREET AND SEWER

\*Central Fdry. Co., N. Y.  
\*Gallen Jr. Wks. & Mfg. Co., Gallen, O.  
\*U. S. Cast Ir. Pipe & Fdry. Co., Barrington, N. J.  
Burch Corp., Crestline, O.  
Canton Fdry. & Mach. Co., Canton, O.  
Casey-Hedges Co., Chattanooga, Tenn.  
H. W. Clark Co., Mattoon, Ill.  
J. B. Clow & Sons, Chicago.  
W. E. Dee Co., Chicago.  
Elkhart Fdry. & Mach. Co., Elkhart, Ind.  
Gilbert Mfg. Co., Aberdeen, S. Dak.  
Klauer Mfg. Co., Dubuque, Ia.  
Madison Fdry. Co., Cleveland, O.  
Pechstein Iron Works, Keokuk, Ia.  
Sessions Foundry Co., Bristol, Conn.  
South Bend Fdry. Co., So. Bend, Ind.

## CATCH BASINS (See Castings, Street)

## CATCH BASIN CLEANING OUTFITS

\*Mack Trucks, Inc., N. Y.  
Atlas Corp., N. Y.  
Elgin Sales Corp., N. Y.  
Movakan Co., Indianapolis, Ind.

## CAULKING MACHINERY AND TOOLS

Cleveland Rock Drill Co., Cleveland, O.  
Helwig Mfg. Co., St. Paul, Minn.

Independent Pa. Tool Co., Chicago.  
Ingersoll-Rand Co., N. Y.  
Maeller Company, Decatur, Ill.

## CHILLINGS, METAL

Berger Mfg. Co., Canton, O.  
Canton Art Metal Co., Canton, O.  
Globe Iron Roofing & Cor. Co., Cincinnati, O.  
Newport Rolling Mill Co., Newport, Ky.  
Klauer Mfg. Co., Dubuque, Ia.  
Geo. L. Mesker & Co., Evansville, Ind.  
Milwaukee Corr. Co., Milwaukee.  
Republic Ir. & Stil. Co., Youngstown, O.  
Wheeling Corr. Co., Wheeling, W. Va.

## CEMENT (P. C. stands for Portland Cement)

\*Pennsylvania-Dixie Cement Corp., N. Y.  
(Brands: *Pennsylvania, Dexter, Penn-Allen, Royal & Clinchfield P. C.*)  
Acme Cement Corp., Catskill, N. Y.  
Aima P. O. Co., Detroit, Mich.  
Alabama P. O. Co., Birmingham, Ala.  
Allentown P. O. Co., Allentown, Pa.  
Alpha F. C. Co., Easton, Pa.  
Ash Grove Lime and P. C. Co., Kansas City, Mo.  
Atlas P. O. Co., N. Y.  
Beaver P. O. Co., Portland, Ore.  
Bessemer Limestone & C. Co., Youngstown, O.  
British Col. Cement Co., Victoria, B. C.  
Canada Cement Co., Ltd., Montreal, Canada.  
Colorado P. O. Co., Denver, Colo.  
Consolidated Cement Corp., Chicago.  
Cowell P. C. Co., Cowell, Cal.  
Crescent P. C. Co., Wampum, Pa.  
Dovey P. C. Co., Kansas City, Mo.  
Diamond P. O. Co., Cleveland, O.  
Edison P. C. Co., N. Y.  
Georgia Cement & Stone Co., Birmingham, Ala.  
Giant P. C. Co., Philadelphia, Pa.  
Glens Falls P. C. Co., Glens Falls, N.Y.  
Golden State P. O. Co., Los Angeles, Cal.  
Great West'n. P. O. Co., Kans. C. Mo.  
Hawkeye P. O. Co., Des Moines, Ia.  
Hercules Cement Corp., Philadelphia.  
Hermiteage P. O. Co., Nashville, Tenn.  
Huron P. O. Co., Detroit, Mich.  
Indiana P. O. Co., Indianapolis, Ind.  
International Cement Corp., N. Y.  
International P. C. Co., Ltd., Spokane, Wash.  
Kansas P. C. Co., Kansas City, Mo.  
Knickerbocker P. C. Co., Inc., Albany, N. Y.  
Kosmos P. O. Co., Louisville, Ky.  
La Tolteca Compania de Cemento Portland, Mexico City, Mex.  
Lawrence Cement Co., New York.  
Lehigh P. C. Co., Allentown, Pa.  
Louisiana P. O. Co., New Orleans.  
Louisville Cement Co., Louisville, Ky.  
Manitowoc P. C. Co., Manitowoc, Wis.  
Mariboro Cement Co., Edmonton, Can.  
Marquette Cement Mfg. Co., Chicago.  
Missouri P. C. Co., St. Louis, Mo.  
Monarch Cement Co., Humboldt, Kans.  
Monolith P. C. Co., Los Angeles, Cal.  
National Cement Co., Birmingham, Ala.  
Nazareth Cement Co., Nazareth, Pa.  
Nebraska Cement Co., Denver, Colo.  
Newago P. C. Co., Newago, Mich.  
New Egyptian P. C. Co., Detroit.  
North Amer. Cement Corp., Albany, N. Y.  
Northwestern States P. C. Co., Mason City, Ia.  
Oklahoma P. C. Co., Denver.  
Olympic P. C. Co., Ltd., Seattle.  
Oregon P. C. Co., Portland, Ore.  
Pacific P. C. Co., San Francisco.  
Peerless P. C. Co., Detroit, Mich.  
Peninsular P. C. Co., Cement City, Mich.  
Penn-Allen Cement Co., Nazareth, Pa.  
Petoskey P. C. Co., Petoskey, Mich.  
Phoenix P. C. Co., Philadelphia.  
Pgh. Plate Glass Co., Zanesville, O.

P. C. Co. of Utah, Salt Lake City.  
Pyramid P. C. Co., Des Moines.  
Riverside P. C. Co., Los Angeles.  
St. Marys Cement Co., Toronto, Can.  
San Antonio P. C. Co., San Antonio.  
Sandusky Cement Co., Cleveland, O.  
Santa Cruz P. C. Co., San Francisco.  
Signal Mountain P. C. Co., Chattanooga, Tenn.  
Southern States P. C. Co., Rockport, Ga.  
Southwest'n P. C. Co., Los Angeles, Cal.  
Standard P. C. Co., Cleveland.  
Sun P. C. Co., Portland, Ore.  
Superior P. C. Co., Seattle, Wash.  
Texas P. C. Co., Dallas, Tex.  
Three Forks P. C. Co., Denver, Colo.  
Tidewater P. C. Co., Baltimore, Md.  
Trinity P. C. Co., Dallas, Tex.  
Union P. O. Co., Denver, Colo.  
U. S. P. C. Co., Denver, Colo.  
Universal P. O. Co., Chicago.  
Utah Idaho Cement Co., Ogden, Utah.  
Virginia P. C. Corp., Norfolk.  
Vulcanite P. C. Co., Philadelphia.  
Wabash P. C. Co., Detroit.  
Warrior Cement Corp., Chatto, Tenn.  
Wellston Iron Furnace Co., Jackson, O.  
Wolverine P. C. Co., Coldwater, Mich.  
Wyandotte P. C. Co., Detroit.

## CEMENT BLOCK MACHINES

\*Cement Block Mach. Co., Newark, N.J.  
Abrams Cement Tool Co., Detroit.

## CEMENT GUNS

\*Cement Gun Co., Allentown, Pa.

## CEMENT INSPECTION (See Inspecting Laboratories)

## CEMENT TOOLS

Abrams Cement Tool Co., Detroit.

## CENTRIFUGAL PUMPS (See Pumps, Centrifugal)

## CHAINS

\*Chain Belt Co., Milwaukee, Wis.  
\*Link-Belt Co., Chicago.  
Amer. Chain Co., Inc., Bridgeport, Conn.  
Columbus McKinnon Chain Co., Columbus, O.  
Diamond Chain & Mfg. Co., Indianapolis, Ind.  
Jeffrey Mfg. Co., Columbus, O.  
U. S. Chain & Forge Co., Pittsburgh, Pa.  
Webster Mfg. Co., Chicago.  
Weller Mfg. Co., Chicago.

## CHIMNEYS, CONCRETE

Hoime Chimney Co., Chicago.  
Rust Engineering Co., Pittsburgh, Pa.  
Weber Chimney Co., Chicago.

## CHIMNEYS, RADIAL BRICK

Amer. Chimney Corp., N. Y.  
Continental Chimney Co. of Cal., Chicago.  
Alphons Custodis Chimney Const. Co., N.Y.  
Heine Chimney Co., Chicago.  
H. R. Heinicke, Inc., Indianapolis, Ind.  
M. W. Kellogg & Co., N. Y.  
Rust Eng. Co., Pittsburgh, Pa.

## CHIMNEYS, STEEL (See Stacks, Steel)

## CHLORINATORS

\*Wallace & Tiernan Co., Inc., Newark, N. J.  
Paradon Eng. Co., Arlington, N. J.

## CHLORINE, LIQUID

(See Liquid Chlorine)

## CHUTES, CONCRETE

\*Insley Mfg. Co., Indianapolis, Ind.  
\*Lakewood Eng. Co., Cleveland, O.  
\*Ransome Conc. Mch. Co., Dunellen, N.J.

## CLAY DIGGERS, PNEUMATIC

\*Gardner-Denver Co., Denver, Col.  
\*Sullivan Machy Co., Chicago  
Chicago Pneumatic Tool Co., New York  
Ingersoll-Rand Co., New York

## CLAY PIPE

(See Pipe, Vitrified Clay)

If you find any errors or omissions in this Where to Purchase list, please send corrections to  
CONTRACTORS AND ENGINEERS MONTHLY



# Where is the Gasoline Dragline to match this for Control and Digging Power?



The Swing cannot steal any power whatever from the main gasoline motor—as this motor compresses air for the swinging engine only when its full power is not needed for pulling the drag cable.

## Overhauls Drag Cable **AT FULL POWER** — while Swinging **AT FULL POWER**

Not every contractor realizes how much extra work can be done by a dragline machine with *direct-connected swinging engines*.

But after you have seen both the friction dragline and Direct Drive, you know the difference. As one Southwestern contractor writes us: "Another contractor near here tried for weeks to use a friction drive gasoline machine, with the size dragline bucket that the manufacturers said it would handle. Then they double-reeved their drag-in cable—the

*engine has not the power to drag in the bucket and swing at the same time."*

Of course a Gas+Air ERIE, which is revolved by direct-connected swinging engines that run on compressed air, *can swing at full power while pulling the drag cable at full power.*

Besides the extra power for hard digging, this gives a Gas+Air ERIE Dragline much better control for accurate cutting of a trench or slope.

**ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.**

Branch Offices: Boston, New York, Philadelphia, Atlanta, Pittsburgh, Buffalo, Detroit, Chicago  
Representatives throughout the U. S. A.

**GAS+AIR ERIE DREADNAUGHT**  
SHOVELS, CRANES, DRAGLINES, ETC.

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# Where to Purchase

## CLIPS, WIRE ROPE

- \*Amar. Steel & Wire Co., Chicago
- Amer. Hoist & Derrick Co., St. Paul, Minn.
- Fischer & Hayes Rope & Steel Co., Chicago
- Hasard Mfg. Co., Wilkesbarre, Pa.
- Thos. Laughlin Co., Portland, Me.
- Marion Malleable Ir. Wks., Marion, Ind.
- G. M. Mockbee & Co., Cincinnati, O.
- John A. Roehling Sons Co., Trenton, N.J.
- Uppen-Walton Co., Cleveland, O.

## CLUTCHES

- \*Link-Belt Co., Chicago
- \*Waukesha Motor Co., Waukesha, Wis.
- Twin Disc Clutch Co., Racine, Wis.

## COAL AND ORE CONVEYING MCHY.

- \*Barber-Greene Co., Aurora, Ill.
- \*Chain Belt Co., Milwaukee, Wis.
- \*Chicago Automatic Conv. Co., Chicago
- \*Good Roads Mch. Co., Kennett Sq., Pa.
- \*Geo. Hais Mfg. Co., N. Y.
- \*Link-Belt Co., Chicago
- \*Mead-Morrison Mfg. Co., E. Boston, Mass.
- Austin Mfg. Co., Chicago
- C. O. Bartlett & Snow Co., Cleveland, O.
- Brown Hoisting Mch. Co., Cleveland, O.
- Fairfield Eng. Co., Marion, O.
- Gifford Wood Co., Hudson, N. Y.
- C. W. Hunt Co., Inc., W. New Brighton, N. Y.
- Jeffrey Mfg. Co., Columbus, O.
- Lidgerwood Mfg. Co., N. Y.
- Portable Machy. Co., Clifton, N. J.
- Robins Conv. Belt Co., N. Y.
- Jas. B. Seaverns Co., Batavia, Ill.
- Webster Mfg. Co., Chicago
- Weller Mfg. Co., Chicago

## COCKS, CURB AND CORPORATION

- \*Union Wtr. Mtr. Co., Worcester, Mass.
- Chapman Valve Mfg. Co., Indian Orchard, Mass.
- Glauber Brass Mfg. Co., Cleveland, O.
- Haydenville Co., Haydenville, Mass.
- Hay Mfg. Co., Erie, Pa.
- Messler Co., Decatur, Ill.

## COLLAPSIBLE HORSES

- Taylor Collapsible Horse Co., Chicago

## COLUMN CLAMPS

- \*Hawley Mfg. Co., Chicago
- \*Inley Mfg. Co., Indianapolis, Ind.
- \*W. A. Kuhlman & Co., Toledo, O.
- \*Sterling Wheelbarrow Co., Milwaukee
- Ellis & Ford Mfg. Co., Detroit, Mich.
- M. & M. Form Clamp Co., Minneapolis
- The O. D. G. Co., Owensboro, Ky.
- Vietor L. Phillips Co., Kansas City, Mo.
- H. W. Ross Co., Cincinnati
- Symons Clamp & Mfg. Co., Chicago
- Universal Form Clamp Co., Chicago

## COMPRESSORS, AIR (See Air Compressors)

## CONCRETE BLOCK MACHINES (See Cement Block Machines)

## CONCRETE FLOOR HARDENER

- Anti-Hydro Waterproofing Co., Newark, N. J.
- Euclid Chemical Co., Cleveland
- General Chemical Co., N. Y.
- Genflex Steel Co., Youngstown, O.
- Granflex Corp., N. Y.
- A. C. Horn Co., L. I. City, N. Y.
- Master Builders Co., Cleveland, O.
- L. Sonneborn Sons, Inc., N. Y.
- Trucon Laboratories, Detroit

## CONCRETE HEATERS

- \*Acroil Burner Co., West New York, N.J.
- \*Littleford Bros., Cincinnati
- \*Alex. Milburn Co., Baltimore, Md.
- Chausse Oil Burner Co., Elkhart, Ind.
- Nauck Mfg. Co., Brooklyn, N. Y.

## CONCRETE MIXERS

- \*Amer. Cem. Mch. Co., Inc., Keokuk, Ia.
- \*Atlas Eng. Co., Milwaukee
- \*Cement Block Machy. Co., Newark, N.J.

## \*Chain Belt Co., Milwaukee

- \*Cook Motor Co., Delaware, O.
- \*Jaeger Mach. Co., Columbus, O.
- \*Koehring Co., Milwaukee, Wis.
- \*Lakewood Eng. Co., Cleveland, O.
- \*John Lensen Mfg. Co., New Holstein, Wis.

## \*Ransome Con. Mch. Co., Dunellen, N.J.

- \*T. L. Smith Co., Milwaukee
- \*Standard Scale & Supply Co., Pittsburgh
- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## \*Standard Scale & Supply Co., Pittsburgh

- Anchor Mfg. Co., Chicago
- Archer Iron Wks., Chicago
- Badger Con. Mixer Co., Milwaukee
- Construction Mch. Co., Waterloo, Ia.
- J. B. Foote Fdry. Co., Fredericktown, O.
- Gray Iron Fdry Co., Reading, Pa.
- Jed Mfg. Co., Centerville, Ia.
- Knickerbocker Co., Jackson, Mich.
- Kiel Mach. Co., Kiel, Wis.
- Kwik-Mix Concrete Mixer Co., Port Washington, Wis.
- Lansing Co., Lansing, Mich.
- Leach Co., Oshkosh, Wis.
- Marsh-Capron Co., Chicago
- Mixermobile Co., Milwaukee
- Orr & Sombower, Reading, Pa.
- Raber & Lang Mfg. Co., Kendallville, Ind.
- Rammell Mfg. Co., Kewaukum, Wis.
- Republic Ir. Wks., Tuncumseh, Mich.

## Rie-wil Co., Cleveland

## CONTRACTORS' EQUIPMENT DEALERS (See Pages 181 to 189)

## CONVEYORS, BELT

- \*Atlas Eng. Co., Milwaukee
- \*Austin-Western Rd. Mch. Co., Chicago
- \*Barber-Greene Co., Aurora, Ill.
- \*Chain-Belt Co., Chicago
- \*Chicago Automatic Conv. Co., Chicago
- \*Galion Ir. Wks. & Mfg. Co., Galion, O.
- \*Good Rds. Mch. Co., Kennett Sq., Pa.
- \*Geo. Hais Mfg. Co., N. Y.
- \*Jos. Honhorst Co., Cincinnati
- \*Link-Belt Co., Chicago
- \*Northern Conveyor Co., Janesville, Wis.
- \*Russell Grader Mfg. Co., Minneapolis
- \*Smith Eng. Wks., Milwaukee
- Austin Mfg. Co., Chicago
- C. O. Bartlett & Snow Co., Cleveland
- Brown Hoisting Machy. Co., Cleveland
- Fairfield Eng. Co., Marion, Ohio
- Gifford Wood Co., Hudson, N. Y.
- Jeffrey Mfg. Co., Columbus, O.
- New Holland Mch. Co., N. Holland, Pa.
- Portable Machinery Co., Clifton, N. J.
- Samuel Olson & Co., Chicago
- Robins Conv. Belt Co., N. Y.
- Jas. B. Seaverns Co., Batavia, Ill.
- Standard Conv. Co., No. St. Paul, Minn.
- Stephens-Adamsen Mfg. Co., Aurora, Ill.
- Universal Crusher Co., Cedar Rapids, Ia.
- Webster Mfg. Co., Chicago
- Weller Mfg. Co., Chicago

## CONVEYORS, BUCKET

- \*Atlas Eng. Co., Milwaukee
- \*Chain-Belt Co., Milwaukee
- \*Chicago Automatic Conv. Co., Chicago
- \*Good Roads Machy. Co., Kennett Sq., Pa.
- \*Geo. Hais Mfg. Co., N. Y.
- \*Jos. Honhorst Co., Cincinnati, O.
- \*Link-Belt Co., Chicago
- \*Mead-Morrison Mfg. Co., E. Boston, Mass.
- \*Russell Grader Mfg. Co., Minneapolis
- Austin Mfg. Co., Chicago
- C. O. Bartlett & Snow Co., Cleveland, O.
- Brown Hoisting Machy. Co., Cleveland, O.
- H. W. Caldwell & Son, Chicago
- Fairfield Eng. Co., Marion, O.
- Gifford Wood Co., Hudson, N. Y.
- Gifford Conv. Co., Elkhart, Ind.
- Guarantee Constn. Co., N. Y.
- Jeffrey Mfg. Co., Columbus, O.
- New Holland Mch. Co., N. Holland, Pa.
- Samuel Olson & Co., Chicago
- Republie Rubber Co., Youngstown, O.
- Robins Conv. Belt Co., N. Y.
- Jas. B. Seaverns Co., Batavia, Ill.
- Stephens-Adamsen Mfg. Co., Aurora, Ill.
- Universal Crusher Co., Cedar Rapids, Ia.
- Webster Mfg. Co., Chicago
- Weller Mfg. Co., Chicago

## CONVEYORS, GRAVITY

- Lamson Co., Syracuse, N. Y.
- Logan Co., Louisville, Ky.
- Mathews Conveyor Co., Elwood City, Pa.
- Standard Conv. Co., No. St. Paul, Minn.

## COUPLINGS, ROSE

- \*Harding Wonder Dr. Co., Ottumwa, Ia.
- Cleveland Pneum. Tool Co., Cleveland, O.
- Gilman Mfg. Co., East Boston, Mass.
- Ingersoll-Rand Co., N. Y.
- W. H. Keller, Inc., Grand Haven, Mich.
- Mulcahey Co., Philadelphia

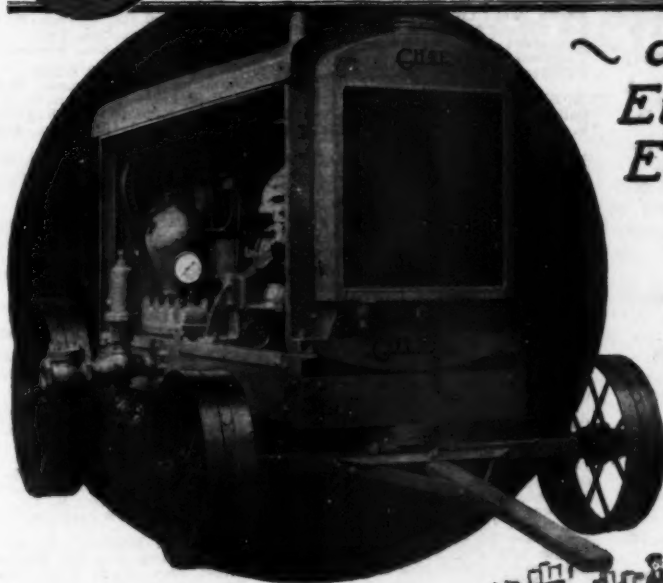
## CRANES, CRAWLER

- \*Erie Steam Shovel Co., Erie, Pa.
- \*Link-Belt Co., Chicago
- \*Mead-Morrison Mfg. Co., Boston
- \*Orion Crane & Shovel Co., Chicago
- \*Star Drilling Mach. Co., Akron, O.
- \*Thos. Shovel Co., Lorain, Ohio
- Austin Machy. Corp., Muskegon, Mich.
- Byers Mach. Co., Ravenna, O.
- McKyer Interstate Co., Cleveland
- Osgood Co., Marion, Ohio
- Universal Crane Co., Cleveland

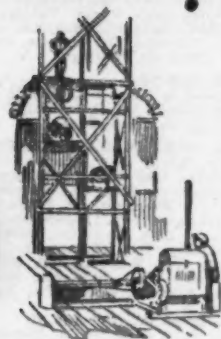
\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*

# **C.H.E.**

PUMPS, HOISTS  
MIXERS & SAW RIGS



~ are  
*Eisemann/  
Equipped!*

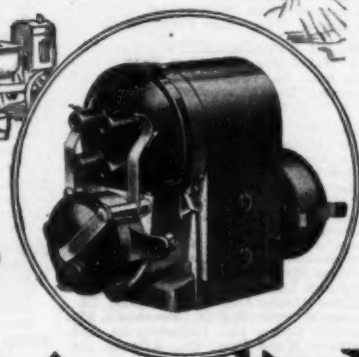
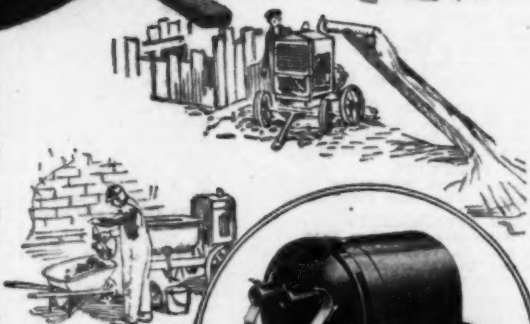


**T**HIS latest addition to the C. H. & E. line—the new triplex Pump is equipped with a magneto about which there is nothing of mystery, nothing unknown.

It is the same identical magneto that has been used for years on all other C. H. & E. products.

A magneto of sterling quality... a magneto with a record of field performance back of it... a magneto that has proved its reliability. And a magneto acceptable to the trade.

EISEMANN MAGNETO CORPORATION  
165 Broadway, New York  
DETROIT • SAN FRANCISCO • CHICAGO



# **EISEMANN**

**ELECTRICAL EQUIPMENT**

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# Where to Purchase

## CRANES, LOCOMOTIVE

\*Bay City Dredge Wks., Bay City, Mich.  
 \*Erie Steam Shovel Co., Erie, Pa.  
 \*Koeberling Co., Milwaukee.  
 \*Link-Belt Co., Chicago.  
 \*Mead-Morrison Mfg. Co., Boston  
 \*Orton Crane & Shovel Co., Chicago.  
 \*Parsons Co., Weston, Iowa.  
 \*Speeder Machy. Corp., Cedar Rapids, Ia.  
 \*Thew Shovel Co., Lorain, O.  
 Amer. Hst. & Derrick Co., St. Paul, Minn.  
 Brown Holsting Machy. Co., Cleveland.  
 Browning Crane Co., Cleveland, O.  
 Davenport Loc. Wks., Davenport, Ia.  
 Industrial Wks., Bay City, Mich.  
 Loc. Crane Co. of Amer., Champaign, Ill.  
 Marion Steam Shovel Co., Marion, O.  
 McMyler Interstate Co., Cleveland, O.  
 Moore Speedcrane Co., Chicago  
 Northwest Eng. Works, Chicago.  
 Ohio Loc. Crane Co., Bucyrus, O.  
 Jas. B. Seaverns Co., Batavia, Ill.  
 U. S. Crane Co., Chicago.

## CRANES, ONE-TON

\*Whitehead & Kales Co., Detroit, Mich.  
 Hughes-Keenan Co., Mansfield, O.  
 Otis Eng. Co., New York.

## CRANES, OVERHEAD TRAVELING

Alliance Mach. Co., Alliance, O.  
 Chasapeake Iron Wks., Baltimore, Md.  
 Chisholm-Moore Mfg. Co., Cleveland  
 Curtis Pn. Mach. Co., St. Louis.  
 Harnischfeger Corp., Milwaukee, Wis.  
 Milwaukee Elec. Crane Co., Milwaukee.  
 Morgan Eng. Co., Alliance, O.  
 Northern Eng. Wks., Detroit, Mich.  
 Shaw Crane Wks., Muskegon, Mich.  
 Shepard Elec. Cr. & Hst. Co., Montour Falls, N. Y.  
 Toledo Crane Co., Bucyrus, O.  
 Whiting Fdry. & Equip. Co., Harvey, Ill.

## CRANES, TRUCK

\*Erted Mch. Mfg. Co., Portland, Ore.  
 \*Orton Crane & Shovel Co., Chicago.  
 Atia Corp., New York.  
 Bay City Fdry. & Mach. Co., Bay City, Mich.  
 Browning Crane Co., Cleveland.  
 Byers Mach. Co., Ravenna, O.  
 Harnischfeger Corp., Milwaukee, Wis.  
 Universal Crane Co., Cleveland.

## CRANES, WRECKING

Bucyrus Co., So. Milwaukee, Wis.  
 Industrial Wks., Bay City, Mich.

## CRAWLER ATTACHMENTS

\*Geo. Haise Mfg. Co., New York.  
 \*Link-Belt Co., Chicago.  
 \*Trackson Co., Milwaukee, Wis.  
 Belle City Mfg. Co., Racine, Wis.

## CREOSOTED BLOCKS, TIMBER, ETC.

Amer. Creos. Co., Inc., Louisville, Ky.  
 Amer. Creos. Wks., Inc., N. Orleans, La.  
 Carter Bloxonsend Flooring Co., K. City, Mo.  
 Colonial Cre. Co., Inc., Louisville, Ky.  
 Compressed Wood Preserving Co., Cincinnati, O.  
 Creos. Materials Co., N. Orleans, La.  
 Georgia Creos. Co., Louisville, Ky.  
 Jennison-Wright Co., Toledo, O.  
 Long Ball Lumber Co., Kansas City, Mo.  
 Midland Creos. Co., Granite City, Ill.  
 Pensacola Creosoting Co., Pensacola, Fla.  
 Republic Creos. Co., Indianapolis, Ind.  
 Southern Wood Pres. Co., Atlanta, Ga.  
 Wyckoff Pipe & Creos. Co., N. Y.

## CREOSOTING AND CREOSOTING OILS

\*Barrett Co., N. Y.  
 Amer. Creos. Wks., Inc., N. Orleans, La.  
 Amer. Tar Prod. Co., Pittsburgh, Pa.  
 Jennison-Wright Co., Toledo, O.  
 Southern Creos. Co., Slidell, La.  
 Southern Ferg. Const. Co., Chattanooga, Ga.  
 Wyckoff Pipe & Creos. Co., N. Y.

## CRUSHERS, ROCK

\*Acme Rd. Machy. Co., Frankfort, N. Y.  
 \*Austin-Western Rd. Mach. Co., Chicago.  
 \*Gallon Iron Wks. & Mfg. Co., Gallien, O.  
 \*Good Rds. Machy. Co., Kennett Sq., Pa.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 \*Smith Eng. Wks., Milwaukee.  
 \*Austin Mfg. Co., Chicago.  
 \*New Holland Mach. Co., New Holland, Pa.  
 \*Startevant Mill Co., Boston.  
 \*Universal Crusher Co., Cedar Rapids, Ia.  
 \*Universal Rd. Machy. Co., Kingston, N.Y.

## CULVERTS, CAST IRON

\*Gallen Ir. Wks. & Mfg. Co., Gallien, O.  
 \*U. & C. I. Pipe & Fdry. Co., Burlington, N. Y.  
 Amer. C. I. Pipe Co., Birmingham, Ala.  
 Beach Mfg. Co., Charlotte, Mich.  
 Gilbert Mfg. Co., Aberdeen, S. D.  
 H. D. Wood & Co., Philadelphia.

## CULVERTS, CORRUGATED METAL

\*Austin-Western Rd. Mach. Co., Chicago.  
 \*Gallon Iron Wks. & Mfg. Co., Gallien, O.  
 \*Good Rds. Mach. Co., Kennett Sq., Pa.  
 \*Austin Mfg. Co., Chicago.  
 \*Bark River Bridge & Culv. Co., Bark River, Mich.  
 Beach Mfg. Co., Charlotte, Mich.  
 Berger Mfg. Co., Jacksonville, Fla.  
 Boardman Co., Okla. City, Okla.  
 Burrham Mfg. Co., Woods Cross, Utah.  
 Calif. Corr. Culv. Co., W. Berkeley, Cal.  
 Canada Ingot Ir. Co., Ltd., Guelph, Ont.  
 Canton Culv. & Silo Co., Canton, O.  
 Coast Culv. & Flume Co., Portland, Ore.  
 Corr. Culv. Co., Moberly, Mo.  
 Dixie Culv. & Metal Co., Atlanta, Ga.  
 Dixie Mfg. Co., Little Rock, Ark.  
 Gilbert Mfg. Co., Aberdeen, S. D.  
 R. Hardesty Mfg. Co., Denver, Colo.  
 Highway Prod. & Mfg. Co., Elmira, N.Y.  
 Ind. Corr. Culv. Co., Mason City, Ia.  
 Iowa Pure Ir. Co., Des Moines, Ia.  
 Klausner Mfg. Co., Dubuque, Ia.  
 Lyle Culv. & Rd. Equip. Co., Minneapolis, Minn.  
 Md. Culv. & Metal Co., Baltimore.  
 N. E. Metal Culv. Co., Palmer, Mass.  
 Nebraska Culv. & Mfg. Co., Wahoo, Neb.  
 Newport Culvert Co., Newport, Ky.  
 North East Metal Culv. Co., Racine, N.H.  
 Northfield Ir. Co., Northfield, Minn.  
 Northwestern Sheet & Ir. Wks., Wapeton, N. D.  
 Ohio Corr. Culv. Co., Middletown, O.  
 W. Q. O'Neill Co., Crawfordville, Ind.  
 Road Supply & Metal Co., Topeka, Kan.  
 Sioux Falls Metal Culv. Co., Sioux Falls, S. D.  
 So. Metal Culv. Co., Salisbury, N. C.  
 Spokane Culv. & Tank Co., Spokane.  
 Tenn. Metal Culv. Co., Nashville.  
 U. S. Br. & Culv. Co., Bay City, Mich.  
 Va. Metal Mfg. Co., Roanoke, Va.  
 Western Metal Mfg. Co., Houston, Tex.  
 Wheeling Corr. Co., Wheeling, W. Va.  
 Wyatt Metal & Br. Wks., Dallas, Tex.

## CULVERT FORMS

\*Blaw-Knox Co., Pittsburgh, Pa.  
 Concrete Form Co., Inc., Syracuse, N.Y.  
 Northfield Iron Co., Northfield, Minn.  
 CURE BOXES  
 Casey-Hodges Co., Chattanooga, Tenn.  
 H. W. Clark Co., Mattoon, Ill.  
 J. B. Clow & Sons, Chicago.  
 Madison Fdry. Co., Cleveland, O.  
 Mueller Co., Decatur, Ill.  
 CURE CUTTER AND BASE FORMS  
 (See Forms, Concrete)  
 CURE GUARDS, STEEL  
 W. S. Godwin Co., Baltimore.  
 CURE STEEL PROTECTED  
 \*Trucon Steel Co., Youngstown, O.  
 Concrete Steel Co., N. Y.  
 CURING OF CONCRETE  
 \*Dew Chemical Co., Midland, Mich.  
 \*Seivay Sales Corp., N. Y.

## CUTTERS, PIPE, HAND

\*Armstrong Mfg. Co., Bridgeport, Ct.  
 Barnes Tool Co., New Haven, Ct.  
 Ellis & Ford Mfg. Co., Detroit.  
 Erie Tool Works, Erie, Pa.  
 Greenfield Tap & Die Corp., Greenfield, Mass.  
 Oswego Tool Co., Oswego, N. Y.  
 Reed Mfg. Co., Erie, Pa.  
 Walworth Mfg. Co., Boston.

## CUTTERS, ROD AND WIRE

\*Koeberling Co., Milwaukee, Wis.  
 Buffalo Forge Co., Buffalo, N. Y.  
 Carolus Mfg. Co., Sterling, Ill.  
 C. D. Edwards Mfg. Co., Albert Lee, Minn.  
 Helwig Mfg. Co., St. Paul, Minn.  
 M. & M. Wire Clamp Co., Minneapolis.  
 Worthington Pump & Machy. Corp., N.Y.

## CUTTING EDGES

\*Russell Grader Mfg. Co., Minneapolis.  
 J. D. Adams & Co., Indianapolis, Ind.  
 Shunk Mfg. Co., Bucyrus, O.

## CUTTING AND WELDING APPARATUS

(See Welding Apparatus)

## CYLINDER HEADS, RICHARDO

\*Waukesha Motor Co., Waukesha, Wis.

## DERRICKS, GUY AND STIFF-LEG

\*Glyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*Dobbie Fdry. & Mach. Co., Niagara Falls, N. Y.  
 \*S. Flory Mfg. Co., Bangor, Pa.  
 \*Inaley Mfg. Co., Indianapolis, Ind.  
 \*Mundy Sales Corp., N. Y.  
 \*Saegen Derrick Co., Chicago.  
 \*Universal Htg. Machy. Corp., Buffalo.  
 Amer. Hst. & Derrick Co., St. Paul, Minn.  
 John T. Horton Co., N. Y.  
 Lakeside Bridge & Steel Co., N. Milwaukee, Wis.  
 Lidgerwood Mfg. Co., N. Y.  
 National Htg. Eng. Co., Harrison, N. J.  
 Street Bros. Mach. Wks., Chattanooga.  
 Superior Iron Wks., Superior, Wis.

## DERRICKS, PIPE LAYING

\*Dobbie Fdry. & Mach. Co., Niagara Falls.  
 Lidgerwood Mfg. Co., N. Y.  
 Street Bros. Mach. Wks., Chattanooga.

## DERRICKS, REVOLVING

\*Glyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*Dobbie Fdry. & Mach. Co., Niagara Falls.  
 Street Bros. Mach. Wks., Chattanooga.

## DERRICKS, STEEL

\*Glyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*Dobbie Fdry. & Mach. Co., Niagara Falls.  
 \*Inaley Mfg. Co., Indianapolis, Ind.  
 Amer. Hst. & Derrick Co., St. Paul.  
 Hayward Co., N. Y.  
 Street Bros. Mach. Wks., Chattanooga.  
 Taylor Port. St. Derrick Co., Chicago.

## DERRICKS, STEEL PORTABLE

\*Glyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*Dobbie Fdry. & Mach. Co., Niagara Falls.  
 Amer. Hst. & Derrick Co., St. Paul.  
 Atia Corp., New York.  
 Lidgerwood Mfg. Co., N. Y.  
 Street Bros. Mach. Wks., Chattanooga.

## DERRICKS, TRAVELING

\*Bay City Dredge Wks., Bay City, Mich.  
 \*Glyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*Dobbie Fdry. & Mach. Co., Niagara Falls.  
 \*Orton Crane & Shovel Co., Chicago.  
 Amer. Hst. & Derrick Co., St. Paul.  
 Hayward Co., N. Y.  
 Nat'l. Htg. Eng. Co., Harrison, N. J.  
 Street Bros. Mach. Wks., Chattanooga.

## DERRICK FITTINGS

\*S. Flory Mfg. Co., Bangor, Pa.  
 \*Mundy Sales Corp., N. Y.  
 Amer. Hst. & Derrick Co., St. Paul.  
 Hayward Co., N. Y.  
 Lidgerwood Mfg. Co., N. Y.  
 Street Bros. Mach. Wks., Chattanooga.

If you find any errors or omissions in this Where to Purchase list, please send corrections to  
 CONTRACTORS AND ENGINEERS MONTHLY



# The finest product of our 25 years' experience~

Here is the ideal bucket for contractors. It has weight enough to bury itself in the material, spread enough to collect a full bucket load and speed enough to insure at least three trips a minute . . . a bucket suitable for locomotive crane or derrick operation.

The New ORTON Clamshell Bucket has flat braced back arms, straight lead cable sheaves, bronze-bushed interlocking hinges, Alemite-Zerk Lubricating System and many other improvements in design and construction.

This New Bucket is the finest product of our twenty-five years' experience. Its principles of construction have been proven sound and a long list of satisfied users vouch for its dependability. Contractors everywhere are using this New ORTON Bucket.

We shall be glad to send complete information, including photographs, descriptive literature and price of any size bucket we manufacture, to anyone interested. The ORTON Clamshell is built in sizes from  $\frac{1}{2}$  to 5 yards.



This is the New ORTON  $\frac{1}{4}$ -yard clamshell bucket. Note the new flat braced back arms, the interlocking hinges and its sturdy appearance in general. It is especially suitable for cleaning up cars because it has straight sides and back. Write now for our new folder describing it.

**Cranes** **ORTON** **Shovels**  
 ORTON CRANE & SHOVEL COMPANY, 608 SO. DEARBORN ST., CHICAGO, ILL.

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# Where to Purchase

## DIAPHRAGM PUMPING OUTFITS

\*John Lanson Mfg. Co., New Holstein, Wis.

## DIESEL ENGINES (See Engines, Oil)

## DISTRIBUTORS, TAR AND ASPHALT

\*Kinney Mfg. Co., Boston  
E. D. Etnyre & Co., Oregon, Ill.  
Municipal Supply Co., So. Bend, Ind.

## DISTRIBUTING PLANTS, CONCRETE

\*Lakewood Eng. Co., Cleveland.  
\*Inslay Mfg. Co., Indianapolis, Ind.  
\*Hansome Conc. Mch. Co., Dunellen, N.J.

## DITCHING MACHINES (See Excavators)

## DOORS AND SHUTTERS, STEEL ROLLING

Cornell Iron Wks., B'klyn., N. Y.  
Kinnear Mfg. Co., Columbus, O.  
Variety Fire Door Co., Chicago  
J. G. Wilson Corp., N. Y.

## DRAFTING MACHINES

Univ. Drafting Mach. Co., Cleveland, O.

## DREDGES

\*Bay City Dredge Wks., Bay City, Mich.  
\*Orton Crane & Shovel Co., Chicago.  
Amer. Steel Dredge Co., Ft. Wayne, Ind.  
Bucyrus Co., So. Milwaukee, Wis.  
Ellisott Machy. Corp., Baltimore  
Hayward Co., N. Y.  
Marion Steam Shovel Co., Marion, O.  
Osgood Co., Marion, O.  
J. B. Schofield's Sons Co., Macon, Ga.  
Stockton Iron Wks., Stockton, Cal.  
Street Bros. Mach. Wks., Chattanooga  
Superior Iron Wks., Superior, Wis.

## DREDGES, DIPPER

\*Bay City Dredge Wks., Bay City, Mich.  
\*Link-Belt Co., Chicago.  
Amer. Steel Dredge Co., Ft. Wayne, Ind.  
Bucyrus Co., So. Milwaukee, Wis.  
Marion Steam Shovel Co., Marion, O.  
Osgood Co., Marion, O.

## DREDGES, HYDRAULIC

Bucyrus Co., South Milwaukee, Wis.  
Ellisott Mach. Corp., Baltimore.  
Marion Steam Shovel Co., Marion, O.  
Morris Mach. Wks., Baldwinville, N.Y.

## DREDGING MACHINERY

\*S. Flory Mfg. Co., Bangor, Pa.  
\*Mundy Sales Corp., N. Y.  
Lidgerwood Mfg. Co., N. Y.  
Street Bros. Mach. Wks., Chattanooga.

## DREDGING PUMPS AND ACCESSORIES

Erie Pump & Engine Wks., Medina, N.Y.  
Ingersoll-Rand Co., N. Y.

## DRILL STEEL SHARPENERS

(See Sharpeners)

## DRILLS, CORE

\*McKiernan-Terry Drill Co., N. Y.  
\*Sullivan Machy. Co., Chicago.  
Ingersoll-Rand Co., N. Y.

## DRILLS, ROCK

\*Dallett Co., Philadelphia.  
\*Gardner-Denver Co., Denver, Col.  
\*Hardscof Wonder Drill Co., Ottumwa, Ia.  
\*Sullivan Machy. Co., Chicago.  
Chicago Pneum. Tool Co., N. Y.  
Cleveland Pneum. Tool Co., Cleveland, O.  
Cleveland Rock Drill Co., Cleveland, O.  
Gilman Mfg. Co., E. Boston.  
Helwig Mfg. Co., St. Paul, Minn.  
Ingersoll-Rand Co., N. Y.  
W. H. Keller Inc., Grand Haven, Mich.  
Wood Drill Wks., Paterson, N. J.

## DRILLS FOR WELLS AND BLAST HOLES (See Well Drilling Machy)

## DRUMS, HOLDING

\*Blaw-Knox Co., Pittsburgh, Pa.

\*Clyde Ir. Wks. Sales Co., Duluth, Minn.  
\*Dobbie Fdry. & Mch. Co., Niagara Falls.  
\*Haltzel Steel Form & Ir. Co., Warren, O.  
Hayward Co., N. Y.  
Street Bros. Mach. Wks., Chattanooga.

## DRYERS, ASPHALT AND CEMENT

Allis-Chalmers Mfg. Co., Milwaukee.  
Amer. Blower Co., Detroit, Mich.  
Atlas Dryer Co., Cleveland, O.  
C. O. Bartlett & Snow Co., Cleveland, O.  
F. D. Cammer & Son Co., Cleveland, O.  
Mosher Mfg. Co., Chicago.  
Ruggles-Coles Eng. Co., N. Y.

## DRYERS, SAND AND GRAVEL

\*Aarold Burner Co., West New York, N.J.  
\*Jos. Honhorst Co., Cincinnati, O.  
\*Littleford Bros., Cincinnati, O.  
\*Alex. Milburn Co., Baltimore, Md.  
Amer. Process Co., N. Y.  
C. O. Bartlett & Snow Co., Cleveland, O.  
Chase & Lyman, Boston  
Chausse Oil Burner Co., Elkhart, Ind.  
Mosher Mfg. Co., Chicago.

## DUMP BODIES FOR CONCRETE

Easton Car & Const. Co., Easton, Pa.  
Lee Trailer & Body Co., Plymouth, Ind.

## DUMP BODIES FOR MOTOR TRUCKS

\*Heli Co., Milwaukee.  
\*Highway Trailer Co., Edgerton, Wis.  
\*Littleford Bros., Cincinnati, O.  
\*Mack Trucks, Inc., N. Y.  
\*Van Dorn Iron Wks. Co., Cleveland, O.  
\*Wood Hyde. Hoist & Body Co., Detroit.  
Amer. Prod. & Trad. Co., Chicago.  
Am. Truck & Body Co., Martinsville, Va.  
Anthony Co., Streator, Ill.  
Atlas Corp., New York.  
Columbia Body Corp., Columbia, Pa.  
Columbian St. Tank Co., Kansas City, Mo.  
Detroit Trailer & Mach. Co., Detroit.  
Detweiler Mfg. Co., Gallon, O.  
Eagle Wagon Wks., Auburn, N. Y.  
Easton Car & Const. Co., Easton, Pa.  
Gallon All Steel Body Co., Gallon, O.  
Griseum-Russell Co., N. Y.  
Herr Dump Car Mfg. Co., Coatesville, Pa.  
Hughes-Keenan Co., Mansfield, O.  
The Hug Co., Highland, Ill.  
Jennings Aut. Dump Body, Roanoke, Va.  
Lee Trailer & Body Co., Plymouth, Ind.  
Mandt Body Co., Keokuk, Ia.  
Marion Steel Body Co., Marion, O.  
Martin-Ferry Corp., York, Pa.  
N. Y. Central Ir. Wks. Hagerstown, Md.  
Pechstein Iron Wks., Keokuk, Ia.  
Stewart Iron Wks. Co., Cincinnati.

## DUMP CARTS AND WAGONS, HORSE

\*Acme Rd. Machy. Co., Frankfort, N. Y.  
\*Austin-Western Rd. Machy. Co., Chicago.  
\*Eagle Wagon Wks., Auburn, N. Y.  
\*Highway Trailer Co., Edgerton, Wis.  
\*La Plant-Chaste Mfg. Co., Cedar Rapids, Ia.

## \*Russell Grader Mfg. Co., Minneapolis.

Acme Wagon Co., Emigsville, Pa.  
J. D. Adams & Co., Indianapolis.  
Austin Mfg. Co., Chicago.  
Bain Wagon Co., Kenosha, Wis.  
Columbia Body Corp., Columbia, Pa.  
Electric Wheel Co., Quincy, Ill.  
Gilbert Mfg. Co., Aberdeen, S. D.  
Hagy Wagon Co., Abingdon, Va.  
G. H. Holtsab & Bro., Jeffersonville, Ind.  
Little Red Wagon Co., Omaha, Neb.  
Ludwighaus-Espenchied Wagon Co., St. Louis.  
Rex-Watson Corp., Canastota, N. Y.  
Stockland Rd. Machy. Co., Minneapolis.  
Streich Bros., Oakshosh, Wis.  
Thornhill Wagon Co., Lynchburg, Va.  
Western Wheeled Scraper Co., Aurora, Ill.

## DUMP WAGONS, (ALL STEEL), TRACTOR DRAWN

\*Enclid Cr. & Hst. Co., Enclid Village, O.

\*La Plant-Chaste Mfg. Co., Cedar Rapids, Iowa.  
Lenhart Wagon Co., Minneapolis.

## DYNAMITE (See Explosives)

## EJECTORS, SEWAGE (See Sewage Ejectors)

## ELECTRIC GENERATORS AND MOTORS

Louis Allis Co., Milwaukee.  
Allis-Chalmers Mfg. Co., Milwaukee.  
Crocker-Wheeler Co., Ampere, N. J.  
Fairbanks, Morse & Co., Chicago.  
General Elec. Co., Schenectady, N. Y.  
Graybar Electric Co., New York.  
Ideal Elec. & Mfg. Co., Mansfield, O.  
Lincoln Elec. Co., Cleveland, O.  
Robbins & Myers Co., Springfield, O.  
Wagner Elec. Mfg. Co., St. Louis.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

## ELECTRIC LAMPS

General Elec. Co., Schenectady, N. Y.  
Westinghouse Lamp Co., N. Y.

## ELECTRIC LIGHTING PLANTS

\*Climax Eng. Co., Clinton, Ia.  
\*Cook Motor Co., Delaware, O.  
Allis-Chalmers Mfg. Co., Milwaukee.  
Cushman Motor Wks., Lincoln, Neb.  
Fairbanks, Morse & Co., Chicago.  
Fuller & Johnson Mfg. Co., Madison, Wis.  
General Elec. Co., Schenectady, N. Y.  
Graybar Electric Co., New York.  
Klauser Mfg. Co., Dubuque, Iowa.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

## ELECTRIC TRANSFORMERS

Allis-Chalmers Mfg. Co., Milwaukee.  
General Elec. Co., Schenectady, N. Y.  
Kuhlman Elec. Co., Bay City, Mich.  
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

## ELECTRIC WIRES (See Wire)

## ELEVATORS, BUCKET

\*Atlas Eng. Co., Milwaukee.  
\*Austin-Western Rd. Machy. Co., Chicago.  
\*Chain Belt Co., Milwaukee, Wis.  
\*Good Rd. Machy. Co., Kennett Sq., Pa.  
\*Geo. Hais Mfg. Co., N. Y.  
\*Link-Belt Co., Chicago.  
\*Littleford Bros., Cincinnati.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Spear-Wells Machy. Co., Oakland, Cal.  
Abrams Cement Tool Co., Detroit.  
Austin Mfg. Co., Chicago.  
C. O. Bartlett & Snow Co., Cleveland, O.  
Brown Htg. Machy. Co., Cleveland, O.  
Fairfield Eng. Co., Marion, Ohio.  
Gifford-Wood Co., Hudson, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
New Holland Mch. Co., N. Holland, Pa.  
Robins Conv. Belt Co., N. Y.  
Stephens-Adams Mfg. Co., Aurora, Ill.  
Univ. Rd. Machy. Co., Kingston, N. Y.  
Webster Mfg. Co., Chicago.  
Weller Mfg. Co., Chicago.  
Worthington Pump & Mch. Corp., N.Y.

## ELEVATORS, PASSENGER, FREIGHT, ETC.

Am. Elev. & Mach. Co., Louisville, Ky.  
Atlantic Elev. Co., Inc., Philadelphia.  
Bay State Elev. Co., Springfield, Mass.  
Haugton Elev. & Mach. Co., Toledo, O.  
Kaesner & Hecht Co., Chicago.  
Llewellyn Ir. Wks., Los Angeles, Cal.  
Montgomery Elev. Co., Moline, Ill.  
Otis Elevator Co., N. Y.  
C. Ridgway & Son Co., Coatesville, Pa.  
A. B. See Elec. Elev. Co., N. Y.  
Spindel Elev. Corp., Reading, Pa.  
Warner Elev. Mfg. Co., Cincinnati.  
Warsaw Elev. Co., Warsaw, N. Y.

## ENGINE DREDGING

Murray Ir. Wks. Co., Burlington, Ia.

## ENGINES, FORD REPLACEMENT

\*Waukesha Motor Co., Waukesha, Wis.

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*

# Speeder has unusual strength

The pioneer Speeder  $\frac{1}{4}$  yard, full revolving shovel gets its extra strength and stability through correct design without using excessive power or weight. The electrically welded base, the extra large turntable, the powerful cable crowd — features which make Speeder performance outstanding. Two speeds on traction and drums provide extraordinary mobility and tremendous line pull. A general utility machine — it earns its way on all classes of work.



The Speeder turntable or bullwheel is six feet in diameter, giving unusual stability under most severe operating conditions.



The structural steel base is doubly strong, being securely riveted with  $\frac{1}{2}$  inch rivets and electric arc welded throughout.

## Speeder Machinery Corporation

1215 South Sixth Street, West  
Cedar Rapids, Iowa

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

# Where to Purchase

## ENGINES, GAS AND GASOLINE

\*Alamo Eng. Co., Hillsdale, Mich.  
 \*Caterpillar Tractor Co., San Leandro, Cal.  
 \*Climax Eng. Co., Clinton, Ia.  
 \*Continental Motors Corp., Muskegon, Mich.  
 \*Cook Motor Co., Delaware, O.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Ertel Mfg. Co., Portland, Ore.  
 \*Hercules Motors Corp., Canton, O.  
 \*F. Van Rossum Hoogendyk, New York.  
 \*John Lauson Mfg. Co., New Helstein, Wis.  
 \*Le Roi Co., Milwaukee.  
 \*Link-Belt Co., Chicago.  
 \*Novo Engine Co., Lansing, Mich.  
 \*Stover Mfg. & Eng. Co., Freeport, Ill.  
 \*Waukesha Motor Co., Waukesha, Wis.  
 \*Witte Engine Wks., Kansas City, Mo.  
 \*Allis-Chalmers Mfg. Co., Milwaukee.  
 \*Beaver Mfg. Co., Milwaukee, Wis.  
 \*Buda Co., Harvey, Ill.  
 \*Charter Gas Eng. Co., Sterling, Ill.  
 \*Chicago Pneum. Tool Co., N. Y.  
 \*Cushman Motor Wks., Lincoln, Neb.  
 \*Electric Wheel Co., Quincy, Ill.  
 \*Evinrude Motor Co., Milwaukee.  
 \*Fairbanks, Morse & Co., Chicago.  
 \*Foss Gas Eng. Co., Springfield, O.  
 \*Fuller & Johnson Mfg. Co., Madison, Wis.  
 \*Hinkley Motors, Inc., Detroit.  
 \*Ingersoll-Rand Co., New York.  
 \*Minneapolis Steel & Machy. Co., Minneapolis, Minn.  
 \*Sanderson-Cyclone Drill Co., Orrville, O.  
 \*Serrval Mfg. Co., Evansville, Ind.  
 \*Sterling Eng. Co., Buffalo, N. Y.  
 \*Universal Motor Co., Oakbrook, Wis.  
 \*Weber Engine Co., Kansas City, Mo.  
 \*Wisconsin Motor Mfg. Co., Milwaukee.  
 \*Workington Pump & Machy. Corp., N.Y.

## ENGINES, HOISTING (See Hoists)

## ENGINES, INDUSTRIAL (See Power Plants, Industrial)

## ENGINES, KEROSENE

\*Alamo Eng. Co., Hillsdale, Mich.  
 \*Climax Eng. Co., Clinton, Ia.  
 \*Hercules Motors Corp., Canton, O.  
 \*John Lauson Mfg. Co., New Helstein, Wis.  
 \*Stover Mfg. & Eng. Co., Freeport, Ill.  
 \*Waukesha Motor Co., Waukesha, Wis.  
 \*Witte Engine Wks., Kansas City, Mo.  
 \*Electric Wheel Co., Quincy, Ill.  
 \*Fuller & Johnson Mfg. Co., Madison, Wis.  
 \*Int'l Harvester Co. of Am., Chicago.

## ENGINES, OIL DIESEL

\*F. Van Rossum Hoogendyk, New York.  
 \*Allis-Chalmers Mfg. Co., Milwaukee.  
 \*Bethlehem St. Co., Bethlehem, Pa.  
 \*Busch-Sulzer Bros.-Deisel Eng. Co., St. Louis.  
 \*Fairbanks, Morse & Co., Chicago.  
 \*Fulton Iron Wks. Co., St. Louis.  
 \*McIntosh & Seymour Corp., Auburn, N.Y.  
 \*New London Ship & Eng. Co., Groton, Ct.  
 \*Nordberg Mfg. Co., Milwaukee, Wis.  
 \*St. Mary's Oil Eng. Co., St. Charles, Mo.  
 \*Western Machinery Co., Los Angeles, Cal.  
 \*SEMI-DIESEL  
 \*Stover Mfg. & Eng. Co., Freeport, Ill.  
 \*Anderson Engine & Fdry. Co., Anderson, Ind.  
 \*Bessmer Gas Eng. Co., Grove City, Pa.  
 \*Buckeye Machinery Co., Lima, O.  
 \*Charter Gas Eng. Co., Sterling, Ill.  
 \*Chicago Pneum. Tool Co., N. Y.  
 \*De La Vergne Mach. Co., N. Y.  
 \*Fairbanks, Morse & Co., Chicago.  
 \*Foss Gas Eng. Co., Springfield, O.  
 \*Ingersoll-Rand Co., N. Y.  
 \*Lombard Gov. Co., Ashland, Mass.  
 \*Muncie Oil Eng. Co., Muncie, Ind.  
 \*Taylor Mach. Co., Cleveland, O.  
 \*Weber Eng. Co., Kansas City, Mo.  
 \*Workington Pump & Machy. Corp., N.Y.

## ENGINES, PUMPING

\*Climax Eng. Co., Clinton, Ia.  
 \*Hercules Motors Corp., Canton, O.  
 \*Stover Mfg. & Eng. Co., Freeport, Ill.  
 \*Waukesha Motor Co., Waukesha, Wis.  
 \*Allis-Chalmers Mfg. Co., Milwaukee.  
 \*Hooven, Owens, Rentschler Co., Hamilton, O.  
 \*Murray Iron Wks., Burlington, Ia.  
 \*Nordberg Mfg. Co., Milwaukee.  
 \*Workington Pump & Machy. Corp., N.Y.

## ENGINES, SWINGING

\*Mundy Sales Corp., N. Y.  
 \*Dake Eng. Co., Grand Haven, Mich.  
 \*Lidgerwood Mfg. Co., N. Y.

## EXCAVATING MACHINERY (See Names Under Excavators, also Steam Shovels)

## EXCAVATORS, CABLEWAY

\*Ertel Mfg. Co., Portland, Ore.  
 \*Link-Belt Co., Chicago.  
 \*Sauerman Bros., Inc., Chicago.  
 \*R. H. Beaumont Co., Philadelphia  
 \*Lidgerwood Mfg. Co., N. Y.  
 \*Street Bros. Mach. Wks., Chattanooga

## EXCAVATORS, CRAWLING TRACTOR

\*Erie Steam Shovel Co., Erie, Pa.  
 \*Thew Shovel Co., Lorain, O.  
 \*Byers Mach. Co., Ravenna, Ohio.

## EXCAVATORS, DITCH AND TRENCH

\*Barber-Greene Co., Aurora, Ill.  
 \*Bay City Dredge Wks., Bay City, Mich.  
 \*Buckeye Trac. Ditcher Co., Findlay, O.  
 \*Erie Steam Shovel Co., Erie, Pa.  
 \*Ertel Mfg. Co., Portland, Ore.  
 \*Inley Mfg. Co., Indianapolis, Ind.  
 \*Keystone Driller Co., Beaver Falls, Pa.  
 \*Link-Belt Co., Chicago.  
 \*Orton Crane & Shovel Co., Chicago.  
 \*Parsons Co., Newton, Ia.  
 \*Russell Grader Mfg. Co., Minneapolis  
 \*Speeder Machy. Corp., Cedar Rapids, Ia.  
 \*Star Drilling Mach. Co., Akron, O.  
 \*Thew Shovel Co., Lorain, O.  
 \*Austin Mach. Corp., Muskegon, Mich.  
 \*Brown Htg. Machy. Co., Cleveland.  
 \*Byers Mach. Co., Ravenna, Ohio.  
 \*Cleveland Trencher Co., Euclid, O.  
 \*Economy Exc. Co., Iowa Falls, Ia.  
 \*Harvard Co., N. Y.  
 \*Lidgerwood Mfg. Co., N. Y.  
 \*Marion Steam Shovel Co., Marion, O.  
 \*Monaghan Mach. Co., Chicago, Ill.  
 \*Osgood Co., Marion, O.  
 \*Owensboro Ditcher & Grader Co., Owensboro, Ky.  
 \*Street Bros. Mach. Wks., Chattanooga  
 \*C. T. Topping Machy. Co., Dayton, O.

## EXCAVATORS, DRAG-LINE

\*Bay City Dredge Wks., Bay City, Mich.  
 \*Erie Steam Shovel Co., Erie, Pa.  
 \*Star Drilling Mach. Co., Akron, O.  
 \*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
 \*Keohring Co., Milwaukee.  
 \*Link-Belt Co., Chicago.  
 \*Orton Crane & Shovel Co., Chicago.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 \*Sauerman Bros., Chicago.  
 \*Speeder Machy. Corp., Cedar Rapids, Ia.  
 \*Star Drilling Mach. Co., Akron, O.  
 \*Thew Shovel Co., Lorain, O.  
 \*Amer. Hat. & Derrick Co., St. Paul.  
 \*Austin Machy. Corp., Muskegon, Mich.  
 \*Brown Htg. Machy. Co., Cleveland, O.  
 \*Bucyrus Co., So. Milwaukee, Wis.  
 \*Byers Mach. Co., Ravenna, Ohio.  
 \*Economy Exc. Co., Iowa Falls, Ia.  
 \*C. L. Gade, Iowa Falls, Ia.  
 \*Harnischfeger Corp., Milwaukee, Wis.  
 \*Hayward Co., N. Y.  
 \*Industrial Wks., Bay City, Mich.  
 \*Lidgerwood Mfg. Co., N. Y.  
 \*Marion Steam Shovel Co., Marion, O.  
 \*Monaghan Mach. Co., Chicago.  
 \*Moore Speederane Co., Chicago  
 \*Osgood Co., Marion, O.

## Page Eng. Co., Chicago

Street Bros. Mach. Wks., Chattanooga

## EXPANDED METAL

\*Truscon Steel Co., Youngstown, O.  
 \*Consolidated Exp. Metal Co., Wheeling, W. Va.  
 \*Northwestern Exp. Metal Co., Chicago.  
 \*Youngstown Pressed St. Co., Warren, O.

## EXPANSION JOINT MATERIAL

\*Barber Asphalt Co., Philadelphia.  
 \*Barrett Co., N. Y.  
 \*Philip Carey Co., Cincinnati, O.  
 \*W. H. Meadows, Inc., Elgin, Ill.  
 \*Truscon Steel Co., Youngstown, O.  
 \*Hoosier Asph. Co., Alexandria, Ind.  
 \*Pioneer Asph. Co., Lawrenceville, Ill.  
 \*Servicised Products Corp., Chicago.  
 \*Texas Co., N. Y.  
 \*Waring-Underwood Co., Philadelphia.

## EXPLOSIVES

\*Atlas Powder Co., Wilmington, Del.  
 \*E. I. Du Pont de Nemours & Co., Wilmington, Del.  
 \*Giant Powder Co., S. Francisco, Cal.  
 \*Grasselli Powder Co., Cleveland, O.  
 \*Hercules Powder Co., Wilmington, Del.

## EXTENSION FRAMES, FORD TRUCK

Swedish Crucible Steel Co., Detroit.

## FENCING

\*American Steel & Wire Co., Chicago.  
 \*Van Dorn Iron Wks. Co., Cleveland, O.  
 \*Adrian Wire Fence Co., Adrian, Mich.  
 \*Amer. Fence & Const. Co., New York.  
 \*Anchor Post Fence Co., N. Y.  
 \*Cyclone Fence Co., Waukegan, Ill.  
 \*DeWiggins Wire Fence Co., Anderson, Ind.  
 \*Ill. Wire & Mfg. Co., Joliet, Ill.  
 \*Ind. Steel & Wire Co., Muncie, Ind.  
 \*Interlocking Fence Co., Morton, Ill.  
 \*Keystone Stil. & Wire Co., Peoria, Ill.  
 \*Kokomo Stil. & Wire Co., Kokomo, Ind.  
 \*Nitselman Bros., Muncie, Ind.  
 \*Mich. Wire Fence Co., Adrian, Mich.  
 \*Page Stil. & Wire Prod. Corp., Bridgeport, Conn.  
 \*Pittsburgh Steel Co., Pittsburgh, Pa.  
 \*Stewart Ir. Wks. Co., Cincinnati, O.  
 \*Tex. Cyclone Fence Co., Ft. Worth, Tex.  
 \*Wayne Iron Wks., Wayne, Pa.  
 \*Wickwire-Spencer Steel Co., N. Y.

## FILING EQUIPMENT, STEEL

\*Van Dorn Iron Wks. Co., Cleveland, O.  
 \*Art Metal Constr. Co., Jamestown, N.Y.  
 \*Berger Mfg. Co., Canton, O.  
 \*Canton Art Metal Co., Canton.  
 \*Gen. Fireproofing Co., Youngstown, O.

## FILTERS, OIL

S. F. Bowser & Co., Inc., Ft. Wayne, Ind.

## FILTERS, WATER

\*Amer. Water Softener Co., Phila., Pa.  
 \*Cochrane Corp., Phila.  
 \*Graver Corporation, E. Chicago, Ind.  
 \*International Filter Co., Chicago  
 \*Norwood Eng. Co., Florence, Mass.  
 \*Roberts Filter Co., Darby, Pa.  
 \*W. B. Seale & Sons, Pittsburgh, Pa.

## FINISHING MACHINES, CONCRETE ROAD (See Concrete Road Finishes)

## FIRE & POLICE ALARM SYSTEMS

\*Gamewell Co., Newton Upper Falls, Mass.  
 \*Harrington-Seaberg Corp., Moline, Ill.  
 \*Sterling Siren Fire Alarm Co., Rochester, N. Y.

## FIRE ALARM SIRENS

\*Union Water Meter Co., Worcester, Mass.  
 \*Erick Elec. Siren Co., St. Paul, Minn.  
 \*Federal Sign System, Chicago.  
 \*Hendrie & Bolthoff Mfg. & Sup. Co., Denver, Colo.  
 \*Holster-Cabot Elec. Co., Boston  
 \*Sterling Siren Fire Alarm Co., Rochester, N. Y.

## FIRE APPARATUS, MOTOR

\*Mack Trucks, Inc., N. Y.  
 \*Ahrens-Fox Fire Eng. Co., Cincinnati, O.

If you find any errors or omissions in this Where to Purchase list, please send corrections to

CONTRACTORS AND ENGINEERS MONTHLY



# Startling Performance

This little Buckeye with  $\frac{3}{8}$ -yard clamshell unloads

- a 60-ton car of sand in 40 minutes
- a 55-ton car of rock in 60 minutes



**C. W. HARTMAN**  
CONCRETE AND STEEL ERECTOR  
DUMP TRUCK WORK A SPECIALTY  
ROUTE WEST CHICAGO  
LEVELING AND EXCAVATING  
SAND AND DIRT CONTRACTING  
IN ALL QUANTITIES

BURNING AND BURNING FOR ROOF

BALDWINFIELD, CALIF.  
June 18, 1937

Mr. Dan R. Brown, President  
The Brown-Harris Company, Inc.,  
140 West 1st St.,  
Los Angeles, Calif.

Dear Sir:

Assuring yours of June 17th in reference  
to my Model "O" Buckeye Excavating Crane.

The crane has proven itself a wonderfully  
fast operating machine, capable of unloading a 60-ton car  
of sand in 40 minutes, a 55-ton car of rock in 1 hour. As you  
operating 6 hours, 7 cars or 6 cars in 10 hours. As you  
know, an operator is working 6 or 10 hours cannot unload  
quite as much material as he would unloading about the  
speed of the machine for a few minutes.

I believe this Model "O" is a wonderful  
little machine.

Very truly yours,

C. W. Hartman

CWH:55

**TIMKEN**  
STEEL ROLLERS  
BALL BEARINGS

## \$4750

F.O.B. FINDLAY

is the price of this full-revolving  
Buckeye Model O Crane without  
clamshell or cab. With all its mul-  
tiple working ability—as Crane,  
Ditcher and Backfiller—it is light,  
fast and dependable.

The price of this Buckeye is as remark-  
able as its performance.

Its surprisingly low cost is made pos-  
sible by large production of one  
standard size.

Model O measures up fully to every  
Buckeye construction ideal. Write  
for descriptive bulletin and check up  
the details yourself.

**THE BUCKEYE TRACTION DITCHER CO., FINDLAY, OHIO**

There's a Buckeye Sales and Service Office Near You

# Buckeye

TRENCH EXCAVATORS FOR OVER 30 YEARS

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

# Where to Purchase

- American-La France Fire Eng. Co.**, Elmira, N. Y.  
**Boyer Fire App. Co.**, Logansport, Ind.  
**Brookway Motor Fire App. Co.**, Cortlandt, N. Y.  
**Buffalo Fire Appl. Corp.**, Buffalo, N. Y.  
**Foamite-Childs Corp.**, Utica, N. Y.  
**Hale Fire Pump Co.**, Conshohocken, Pa.  
**Jaeger Portable Power Corp.**, Detroit  
**Northern Fire Apparatus Co.**, Minneapolis, Minn.  
**Peter Pirsch & Sons Co.**, Kenosha, Wis.  
**Prospect Fire Engine Co.**, Prospect, O.  
**Seagrave Co.**, Columbus, O.  
**Stuts Fire Eng. Co.**, Indianapolis, Ind.  
**Waterous Fire Eng. Wks.**, St. Paul, Minn.  
**White Co.**, Cleveland
- FIRE EXTINGUISHERS, CHEMICAL**  
**American-LaFrance Fire Eng. Co.**, Elmira, N. Y.  
**Buffalo Fire App. Corp.**, Buffalo, N. Y.  
**Foamite-Childs Corp.**, Utica, N. Y.  
**Pyrene Mfg. Co.**, Newark, N. J.
- FIRE HOSE (See Hose, Fire)**
- FIRST AID EQUIPMENT**  
**American-La France Fire Engine Co.**, Elmira, N. Y.
- FITTINGS, ACID RESISTING**  
**\*Barber Asphalt Co.**, Philadelphia.
- FLEXIBLE JOINTS**  
**\*Central Foundry Co.**, N. Y.  
**\*U. S. C. I. Pipe & Fdry. Co.**, Burlington, N. J.  
**Coldwell-Wilcox Co.**, Newburgh, N. Y.  
**Crane Co.**, Chicago.  
**United Lead Company**, N. Y.
- FLOOD LIGHTING PROJECTORS**  
**General Electric Co.**, Schenectady.
- FLOORING, COMPOSITION**  
**\*Barber Asphalt Co.**, Phila., Pa.  
**\*Barrett Co.**, N. Y.  
**Am. Mason Safety Tr. Co.**, Lowell, Mass.  
**Johns-Manville, Inc.**, N. Y.  
**Marine Decking & Sup. Co.**, Phila., Pa.  
**Franklyn R. Muller & Co.**, Waukegan, Ill.
- FLOORS, WOOD BLOCK**  
**\*Barrett Co.**, N. Y.  
**Carter Bloxmond Flooring Co.**, Kansas City, Mo.  
**Jennison-Wright Co.**, Toledo, O.  
**Midland Creos. Co.**, Toledo, O.  
**Republie Creos. Co.**, Indianapolis, Ind.  
**Sou. Wood Preserving Co.**, Atlanta, Ga.  
**Wyckoff Pipe & Creos. Co.**, N. Y.
- FLUSH TANKS**  
**\*Pacific Flush Tank Co.**, Chicago & N. Y.
- FLUSHERS, STREET (See Street Flushers and Sprinklers)**
- FORGES**  
**Buffalo Forge Co.**, Buffalo, N. Y.  
**Hauck Mfg. Co.**, B'klyn, N. Y.
- FORGES, OIL (Rivet Heating)**  
**\*Mead-Morrison Mfg. Co.**, E. Boston  
**Hauck Mfg. Co.**, B'klyn, N. Y.
- FORM CLAMPS**  
**\*Bawley Mfg. Co.**, Chicago.  
**\*Insley Mfg. Co.**, Indianapolis, Ind.  
**\*W. A. Kuhlman & Co.**, Toledo, O.  
**M. & M. Wire Clamp Co.**, Minneapolis.  
**Universal Form Clamp Co.**, Chicago.
- FORMS, CONCRETE**  
**\*Blaw-Knox Co.**, Pittsburgh, Pa.  
**\*Heltzel Fd. Form & Ir. Co.**, Warren, O.  
**\*Lakewood Eng. Co.**, Cleveland, O.  
**\*Trasson Steel Co.**, Youngstown, O.  
**Concrete Form Co., Inc.**, Syracuse, N. Y.
- Hotchkiss Std. Products Co.**, Binghamton, N. Y.  
**Metal Forming Corp.**, Milwaukee.
- FORMS, MANHOLE, PIPE, SEWER, ETC**  
**\*Heltzel Std. Form & Ir. Co.**, Warren, O
- FORMGRADERS**  
**\*Ted Carr & Co.**, Chicago
- FOUNTAINS, DRINKING**  
**Casey-Hedges Co.**, Chattanooga, Tenn.  
**Jas. B. Clow & Sons**, Chicago.  
**Crane Co.**, Chicago.  
**J. L. Mott Iron Wks.**, New York  
**Murdock Mfg. & Sup. Co.**, Cincinnati.  
**Puro San. Dr. Fdn. Co.**, Haydensville, Mass.  
**Rundie-Spence Mfg. Co.**, Milwaukee.  
**Stewart Iron Wks. Co.**, Cincinnati, O.  
**Halsey W. Taylor Co.**, Warren, O.  
**Century Brass Wks.**, Belleville, Ill.
- FULL CRAWLERS**  
**\*Trackson Co.**, Milwaukee
- FURNITURE AND FILES, STEEL**  
**\*Van Dorn Iron Wks. Co.**, Cleveland, O.  
**Art Metal Const. Co.**, Jamestown, N. Y.  
**Canton Art Metal Co.**, Canton.  
**Gen. Fireproofing Co.**, Youngstown, O.
- FURNING AND SLEEPER ANCHORS**  
**Dayton Sure Grip & Shore Co.**, Dayton, O.
- GARBAGE CANS (See Cans)**
- GARBAGE DISPOSAL SYSTEMS**  
**American Beccari Corp.**, N. Y.  
**C. O. Bartlett & Snow Co.**, Cleveland, O.  
**Decarie Incinerator Co.**, L. I. C., N. Y.  
**Goder Incinerator Corp.**, Chicago.  
**Hiler Eng. & Const. Co.**, B'klyn, N. Y.  
**Midwest Incinerator Co.**, Chicago.  
**Morse-Boulger Destructor Co.**, N. Y.  
**Nye Odorless Crematory Co.**, Macon, Ga.  
**Pittsburgh-Des Moines Steel Co.**, Pittsburgh, Pa.
- GARBAGE TRAILERS AND BODIES**  
**\*Heil Co.**, Milwaukee.  
**\*Highway Trailer Co.**, Edgerton, Wis.  
**\*Littleford Bros.**, Cincinnati.  
**Atia Corp.**, New York.  
**Detroit Trailer & Mach. Co.**, Detroit.  
**Lee Trailer & Body Co.**, Plymouth, Ind.  
**Troy Trailer & Wagon Co.**, Troy, O.
- GARBAGE TRUCKS**  
**\*Heil Co.**, Milwaukee, Wis.  
**Geo. H. Holabrook & Bro.**, Jeffersonville, Ind.  
**Lee Trailer & Body Co.**, Plymouth, Ind.  
**Rex-Watson Corp.**, Canastota, N. Y.
- GAS METERS (See Meters, Gas)**
- GAS PRODUCERS**  
**Westinghouse Elec. & Mfg. Co.**, E. Pittsburgh, Pa.  
**R. D. Wood & Co.**, Phila., Pa.
- GASOLINE STORAGE TANKS**  
**\*Heil Co.**, Milwaukee, Wis.  
**\*Littleford Bros.**, Cincinnati, O.  
**Biggs Boiler Works**, Akron, O.  
**Birmingham Tank Co.**, B'irmingham, Ala.  
**S. F. Bowser & Co., Inc.**, Ft. Wayne, Ind.  
**Chicago Bridge & Iron Wks.**, Chicago.  
**Graver Corp.**, E. Chicago, Ind.  
**Wm. B. Scaife & Sons**, Pittsburgh, Pa.  
**Tokheim Oil Tank & Pump Co.**, Ft. Wayne, Ind.  
**United Iron Wks. Inc.**, K. City, Mo.  
**Wayne Co.**, Ft. Wayne, Ind.
- GATES, SLUICE**  
**Chapman Valve Mfg. Co.**, Indian Orchard, Mass.  
**Combs Valve Co.**, Boston, Mass.  
**Coldwell-Wilcox Co.**, Newburgh, N. Y.  
**E. Hardesty Mfg. Co.**, Denver.  
**Ladlow Valve Mfg. Co.**, Troy, N. Y.
- GATES FOR PARKS AND CREEP-TERIES**  
**Stewart Iron Wks. Co.**, Cincinnati, O.  
**Wayne Iron Wks.**, Wayne, Pa.
- GAUGES, WATER**  
**Bristol Co.**, Waterbury, Conn.  
**Leakenhelm Co.**, Cincinnati, O.  
**Walworth Mfg. Co.**, Boston.
- GAUGES, SURFACE, RESERVOIR AND SPECIAL WATER-WORKS**  
**Builders Iron Fdry.**, Providence, R. I.  
**Simplex Valve & Meter Co.**, Phila., Pa.
- GENERATOR SETS**  
**\*Climax Eng. Co.**, Clinton, Iowa.  
**\*Cook Motor Co.**, Delaware, O.  
**Carbic Mfg. Co.**, Duluth.
- GLASS, FIREPROOF (See Wire Glass)**
- GOVERNORS, GASOLINE ENGINE**  
**\*Gardner-Denver Co.**, Denver, Col.  
**Pickering Governor Co.**, Portland, Ct.
- GRADERS, ROAD (See Road Graders)**
- GRADER, BLADES**  
**\*Gallien Ir. Wks. & Mfg. Co.**, Gallien, O.  
**\*Russell Grader Mfg. Co.**, Minneapolis  
**J. D. Adams & Co.**, Indianapolis, Ind.  
**Shunk Mfg. Co.**, Bucyrus, O.
- GRAND STANDS, PORTABLE**  
**Circle A. Prod. Corp.**, Newcastle, Ind.  
**Leavitt Mfg. Co.**, Urbana, Ill.  
**Wayne Iron Wks.**, Wayne, Pa.
- GRATING, STEEL**  
**\*Blaw-Knox Co.**, Pittsburgh.
- GREASE**  
**\*Jos. Dixon Crucible Co.**, Jersey City, N. J.  
**\*Dixey, Inc.**, St. Louis.
- GRINDERS**  
**Chicago Pneum. Tool Co.**, N. Y.  
**Cleveland Pneum. Tool Co.**, Cleveland, O.  
**Ingersoll-Rand Co.**, N. Y.
- GRIZZLIES**  
**\*Smith Engineering Works**, Milwaukee  
**Allis-Chalmers Mfg. Co.**, Milwaukee  
**Austin Mfg. Co.**, Chicago.  
**Robins Conv. Belt Co.**, New York  
**Stephens-Adamsen Mfg. Co.**, Angola, Ill.
- GUARDS, ROAD & HIGHWAY**  
**\*Am. Steel & Wire Co.**, Chicago.  
**\*Williamsport Wire Rope Co.**, Williamsport, Pa.  
**Cyclone Fence Co.**, Waukegan, Ill.  
**Hazard Mfg. Co.**, Wilkesbarre, Pa.  
**Stewart Iron Wks. Co.**, Cincinnati.  
**Wickwire-Spencer Steel Co.**, N. Y.
- GYPSPUM PRODUCTS**  
**U. S. Gypsum Co.**, Chicago.  
**Fenton Mfg. Co.**, Cleveland, O.
- HAMMERS, STEAM, FILE (See File Hammers, Steam)**
- HEAT INSULATING MATERIAL**  
**\*Philip Carey Co.**, Cincinnati, O.  
**Johns-Manville, Inc.**, N. Y.
- HEATING KETTLES (See Kettles)**
- HIGHWAY MOWERS**  
**Rawis Mfg. Co.**, Chicago.
- HITCHES**  
**\*Gustav Schaefer Wagon Co.**, Cleveland, O.  
**\*Trail-IT Co.**, St. Paul.  
**\*Whitehead & Kales Co.**, Detroit.  
**Detroit Trailer & Mach. Co.**, Detroit.  
**Fenton Mfg. Co.**, Cleveland, O.
- HOISTS, AUTOMATIC**  
**Zetterland Hat & Mch. Co.**, Milwaukee.
- HOISTS, BELT-DRIVEN**  
**\*Amer. Saw Mill Mch. Co.**, Hackensack, N. J.  
**\*Dobbie Fdry. & Mach. Co.**, Niagara Falls.  
**\*Domestic Engine & Pump Co.**, Shippensburg, Pa.

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*



**F**AST swing — and no hesitating uncertainty in stopping and dumping the dipper. Precision and speed every second!

No nibbling when the dipper goes after its load. It bites deep—takes a heaping load. Why? Because independent crowd puts power behind the dipper to drive it deep! That's a big time saver! Crowds above and beyond end of the boom! Ready for anything at command of the levers without adjustment — high bank work, deep digging, high dumping, shallow stripping!

**Finger Tip Control**—that's one of the reasons for precision — as well as for speed!

**Know the Koehring—its Heavy Duty construction --speed!** Write for Koehring Shovel Bulletin No. 56

**Shovel Capacities**

Lines-of-plate struck measure.

Quickly convertible to crane or dragline.

No. 301—19'-6" Boom. 5/8 Yd. Dipper on 19' Dipper Sticks; 1 Yd. Dipper on 13' Dipper Sticks.

Shock absorber on boom. Wisconsin four cylinder gasoline engine, 5 1/2" x 6 1/2", 1,000 R. P. M.

No. 301—34' Boom. 1 Yd. Dipper on 19' Dipper Sticks; 1 1/4 Yd. Dipper on 16' Dipper Sticks; 1 1/2 Yd. Dipper on 13' Dipper Sticks.

Shock absorber on boom. Wisconsin four cylinder gasoline engine, 6" x 7", 925 R. P. M.

**KOEHRING COMPANY MILWAUKEE WISCONSIN**

PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES

Sales Offices and Service Warehouses in all principal cities

Foreign Dept., Room 1370, 30 Church St., New York City.

Mexico, P. O. Lapum, Cinco De Mayo 21, Mexico, D. F.

A.S.P.-1

# KOEHRING

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# Where to Purchase

- \*Mead-Morrison Mfg. Co., Boston, Mass.  
 \*Mundy Sales Corp., N. Y.  
 American Hoist & Derrick Co., St. Paul, Minn.  
 Lidgerwood Manufacturing Co., N. Y.  
 Street Bros. Mach. Wks., Chattanooga.  
 Weller Mfg. Co., Chicago.
- HOISTS, CONCRETE, TOWER**  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Insley Mfg. Co., Indianapolis, Ind.  
 \*Lakewood Eng. Co., Cleveland, O.  
 \*Mead-Morrison Mfg. Co., Boston.  
 \*Mundy Sales Corp., N. Y.  
 \*Nove Engine Co., Lansing, Mich.  
 \*Ransome Cent. Mch. Co., Danellen, N.J.  
 English Bros. Machy. Co., Kansas City.  
 Lidgerwood Manufacturing Co., N. Y.  
 Street Bros. Mach. Wks., Chattanooga.
- HOISTS, ELECTRIC**  
 \*Clyde Iron Wks. Sales Co., Duluth, Minn.  
 \*Dobbie Fdry. & Mach. Co., Niagara Falls.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*S. Flory Mfg. Co., Bangor, Pa.  
 \*Mead-Morrison Mfg. Co., Boston.  
 \*Mundy Sales Corp., N. Y.  
 \*Nove Engine Co., Lansing, Mich.  
 \*O. K. Clutch & Mach. Co., Columbia, Pa.  
 \*Sullivan Machy. Co., Chicago.  
 Am. Hoist & Derrick Co., St. Paul, Minn.  
 Chisholm-Moore Co., Cleveland, O.  
 Construction Machy. Co., Waterloo, Ia.  
 Dake Eng. Co., Grand Haven, Mich.  
 English Bros. Machy. Co., Kansas City.  
 Harnischfeger Corp., Milwaukee.  
 Lidgerwood Manufacturing Co., N. Y.  
 Ntl. Hoisting Eng. Co., Harrison, N. J.  
 Northern Eng. Wks., Detroit.  
 Street Bros. Mach. Wks., Chattanooga.  
 Thomas Elev. Co., Chicago.  
 Treadwell Eng. Co., Easton, Pa.  
 Vulcan Iron Wks., Wilkes-Barre, Pa.
- HOISTS, FORDSON**  
 \*Clyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*Ersted Mach. Mfg. Co., Portland, Ore.  
 \*Pioneer Tractors Inc., Winona, Minn.  
 Okla. Eng. & Fdry. Co., Muskogee, Okla.  
 Otis Eng. Corp., N. Y.  
 Sheffield Tool & Supply Co., Sheffield, Pa.
- HOISTS, GASOLINE**  
 \*Amer. Saw Mill Mch. Co., Hackettstown, N. J.  
 \*Clyde Iron Wks. Sales Co., Duluth, Minn.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Ersted Mach. Mfg. Co., Portland, Ore.  
 \*S. Flory Mfg. Co., Bangor, Pa.  
 \*Mead-Morrison Mfg. Co., Boston.  
 \*Mundy Sales Corp., N. Y.  
 \*Nove Engine Co., Lansing, Mich.  
 \*O. K. Clutch & Mach. Co., Columbia, Pa.  
 \*Pioneer Tractors, Inc., Winona, Minn.  
 Amer. Hoist & Der. Co., St. Paul, Minn.  
 Amer. Mfg. & Eng. Co., Kalamazoo, Mich.  
 Austin Mfg. Co., Chicago.  
 Buffalo Hoist & Derrick Co., Buffalo, N. Y.  
 C. H. & E. Mfg. Co., Milwaukee.  
 Construction Machy. Co., Waterloo, Ia.  
 Dake Eng. Co., Grand Haven, Mich.  
 English Bros. Machy. Co., Kansas City.  
 Lansing Co., Lansing, Mich.  
 Lidgerwood Manufacturing Co., N. Y.  
 Ntl. Hoisting Eng. Co., Harrison, N. J.  
 Orr & Sombower, Reading, Pa.  
 Street Bros. Mach. Wks., Chattanooga.  
 Thomas Elevator Co., Chicago.
- HOISTS, PNEUMATIC**  
 \*Gardner-Denver Co., Denver, Col.  
 \*Mead-Morrison Mfg. Co., Boston.  
 \*Sullivan Mch. Co., Chicago.  
 Chicago Pneumatic Tool Co., N. Y.  
 Curtis Pa. Mch. Co., St. Louis.
- Dake Engine Co., Grand Haven, Mich.  
 Detroit Hoist & Mach. Co., Detroit.  
 Gilman Mfg. Co., E. Boston, Mass.  
 Hanna Eng. Works, Chicago.  
 Independent Pneum. Tool Co., Chicago.  
 Ingersoll-Rand Co., N. Y.  
 Northern Eng. Wks., Detroit, Mich.  
 Worthington Pump & Mch. Corp., N.Y.
- HOISTS, STEAM**  
 \*Clyde Iron Wks. Sales Co., Duluth, Minn.  
 \*S. Flory Mfg. Co., Bangor, Pa.  
 \*Mead-Morrison Mfg. Co., Boston.  
 \*Mundy Sales Corp., N. Y.  
 \*Sullivan Machy. Co., Chicago.  
 Amer. Hoist & Derrick Co., St. Paul, Minn.  
 Dake Engine Co., Grand Haven, Mich.  
 Hardie-Tynes Mfg. Co., Birmingham, Ala.  
 Ingersoll-Rand Co., N. Y.  
 Ntl. Hoisting Eng. Co., Harrison, N. J.  
 Orr & Sombower, Reading, Pa.  
 Street Bros. Mach. Wks., Chattanooga.  
 Thomas Elev. Co., Chicago.  
 Treadwell Eng. Co., Easton, Pa.
- HOISTS FOR MOTOR TRUCKS**  
 \*Heil Co., Milwaukee.  
 \*Van Dorn Iron Wks., Cleveland, O.  
 \*Wood Hydr. Hoist & Body Co., Detroit.  
 Atlas Corp., New York.  
 Hydr. Hoist Mfg. Co., St. Paul, Minn.  
 Joliet Mfg. Co., Joliet, Ill.  
 Lidgerwood Manufacturing Co., N. Y.  
 Rock Mfg. Co., Waterloo, N. Y.
- HOISTS, PORTABLE**  
 \*Pioneer Tractors, Inc., Winona, Minn.  
 Jas. B. Seaverns Co., Batavia, Ill.  
 Joliet Mfg. Co., Joliet, Ill.
- HOPPERS, CONCRETE (Aggregate Measuring)**  
 \*Heitzel St. Form & Ir. Co., Warren, O.  
 \*Lakewood Eng. Co., Cleveland, O.  
 \*Ransome Cent. Mch. Co., Danellen, N. J.  
 Butler Bin Co., Waukegan, Wis.  
 C. S. Johnson Co., Champaign, Ill.  
 Jas. B. Seaverns Co., Batavia, Ill.
- HOSE, AIR**  
 \*The Dallett Co., Phila., Pa.  
 \*Hardsocg Wonder Dr. Co., Ottumwa, Ia.  
 Chicago Pneumatic Tool Co., N. Y.  
 Cincinnati Rubber Mfg. Co., Cincinnati.  
 Cleveland Rock Drill Co., Cleveland, O.  
 Gilman Mfg. Co., E. Boston, Mass.  
 Goodyear Tire & Rubber Co., Akron, O.  
 Ingersoll-Rand Co., N. Y.  
 Mulconroy Co., Inc., Phila., Pa.  
 Penna. Flexible Metallic Tubing Co., Phila., Pa.  
 Republic Rubber Co., Youngstown, O.  
 U. S. Rubber Co., N. Y.
- HOSE, FIRE**  
 Bi-Lateral Fire Hose Co., Chicago.  
 Eureka Fire Hose Mfg. Co., N. Y.  
 Fabric Fire Hose Co., N. Y.  
 B. F. Goodrich Rubber Co., Akron, O.  
 Goodyear Tire & Rubber Co., Akron, O.
- HOUSE-MOVING EQUIPMENT**  
 \*La Plant-Choate Mfg. Co., Cedar Rapids, Ia.
- HOUSE NUMBERS**  
 Hamilton Metal Prod. Co., Hamilton, O.  
 C. H. Hanson Co., Chicago.  
 Niagara Metal Stamping Corp., Niagara Falls, N. Y.
- HOUSES, PORTABLE (See Portable Buildings)**
- HYDRANTS, FIRE**  
 Chapman Valve Mfg. Co., Indian Orchard, Mass.  
 Columbian Ir. Wks., Chatta., Tenn.  
 Darling Valve & Mfg. Co., Williamsport, Pa.
- Eddy Valve & Mfg. Co., Waterford, N.Y.  
 Iowa Valve Co., Oskaloosa, Ia.  
 Kennedy Valve Mfg. Co., Elmira, N. Y.  
 Lindlow Valve Mfg. Co., Troy, N. Y.  
 Norwood Eng. Co., Florence, Mass.  
 Rensselaer Valve Co., Troy, N. Y.  
 A. P. Smith Mfg. Co., E. Orange, N. J.  
 Watrous Co., St. Paul.  
 R. D. Wood & Co., Phila., Pa.
- HYDRAULIC RAMS**  
 Deming Co., Salem, O.  
 Johnson Mfg. Co., Seattle, Wash.  
 Rife Hydraulic Engine Co., N. Y.  
 Ramsey Pump Co., Seneca Falls, N. Y.
- ICE-MAKING MACHINERY**  
 Arctic Ice Mach. Co., Canton, O.  
 Baker Ice Mach. Co., Omaha, Neb.  
 Brunswick-Kroeschell Co., N. Brunswick, N. J.  
 Carbondale Mach. Co., Carbondale, Pa.  
 De La Vergne Mach. Co., N. Y.  
 Frick Co., Inc., Waynesboro, Pa.  
 Ingersoll-Rand Co., New York.  
 Triumph Ice Mach. Co., Cincinnati, O.  
 United Iron Wks., Inc., K. City, Mo.  
 Vilter Mfg. Co., Milwaukee, Wis.  
 Henry Vogt Mach. Co., Louisville, Ky.  
 York Mfg. Co., York, Pa.
- IGNITION SYSTEMS**  
 \*Bismann Magneto Corp., New York.  
 American Bosch Magneto Corp., Springfield, Mass.  
 Dayton Eng. Lab. Co., Dayton, O.  
 Splittorf Electric Co., Newark, N. J.
- INCINERATORS, GARBAGE (See Garbage Disposal)**
- INDICATOR POSTS (See Valves)**
- INSPECTING LABORATORIES**  
 \*Genard & Busby, Burlington, N. J.  
 \*Pittsburgh Testing Lab., Pittsburgh.  
 Allentown Testing Lab., Allentown, Pa.  
 E. L. Conwell & Co., Phila., Pa.  
 Gulick-Henderson Co., N. Y.  
 Robert W. Hunt Co., Chicago.  
 N. Y. Testing Lab., N. Y.
- INSTRUMENTS AND SUPPLIES (Surveyors' and Engineers')**  
 Wm. Ainsworth & Sons, Denver, Col.  
 L. Beckman Co., Toledo, O.  
 C. L. Berger & Sons, Boston.  
 Brandis & Sons Mfg. Co., B'klyn N. Y.  
 Buff & Buff Mfg. Co., Boston.  
 Eugene Dietzgen Co., Chicago.  
 W. & L. E. Gurley, Troy, N. Y.  
 Keuffel & Esser Co., Hoboken, N. J.  
 Kolesch & Co., New York.  
 A. Liets Co., San Francisco.  
 Leupold-Volpel & Co., Portland, Ore.  
 Warren Knight Co., Phila., Pa.  
 F. Weber & Co., Phila., Pa.  
 David White Co., Milwaukee, Wis.
- INTEGRAL CURB AND BASE FORMS (See Forms, Concrete)**
- IRON WORK, STRUCTURAL AND ORNAMENTAL (See Bridges and Buildings)**
- JACKS, LIFTING**  
 \*McKlerman-Terry Drill Co., N. Y.  
 \*Templeton, Kenly & Co., Ltd., Chicago.  
 Duff Mfg. Co., Pittsburgh, Pa.  
 Joyce-Cridland Co., Dayton, O.  
 A. O. Norton, Inc., Moline, Ill.  
 Oil Jack Co., N. Y.  
 Rees Mfg. Co., Pittsburgh, Pa.  
 Watson-Stillman Company, N. Y.
- JACKS, PIPE FORGING**  
 Duff Mfg. Co., Pittsburgh, Pa.  
 Easy Mfg. Co., Lincoln, Neb.
- JAIL AND PRISON WORK**  
 \*Van Dorn Iron Wks. Co., Cleveland.  
 E. T. Barnum Iron Wks., Detroit.

If you find any errors or omissions in this Where to Purchase list, please send corrections to

CONTRACTORS AND ENGINEERS MONTHLY





# Keep Materials Moving



Northern Conveyors are available in sizes and types to fit every material-handling purpose. Capacities range from 35 to 160 tons of loose material per hour. Because of their extremely rigid "Built Better" construction, Northern Conveyors can be had in all lengths up to 100 feet, and in six separate belt widths. Whether it's handling sand, gravel, stone, concrete, crushed rock, brick, coal, ashes, mortar, lime, earth, packages or units—anything and everything in loose and semi-loose material—you can find a standard Northern to fit the job. And when it's material-handling requiring radically special equipment, a Northern can be built for the job, quickly and economically.

*Write for the Catalog.*

**NORTHERN CONVEYOR & MFG. CO.**

Janesville, Wisconsin

*Belt Scraper and Stationery Conveyors,  
Portable Steel Hoppers, Bag Cleaners*

**Northern**  
**BUILT BETTER**  
**Portable CONVEYORS**

NORTHERN CONVEYOR & MFG. CO.  
Janesville, Wisconsin  
Send catalog on Northern Conveyors.

Name .....

Address .....

City ..... State .....

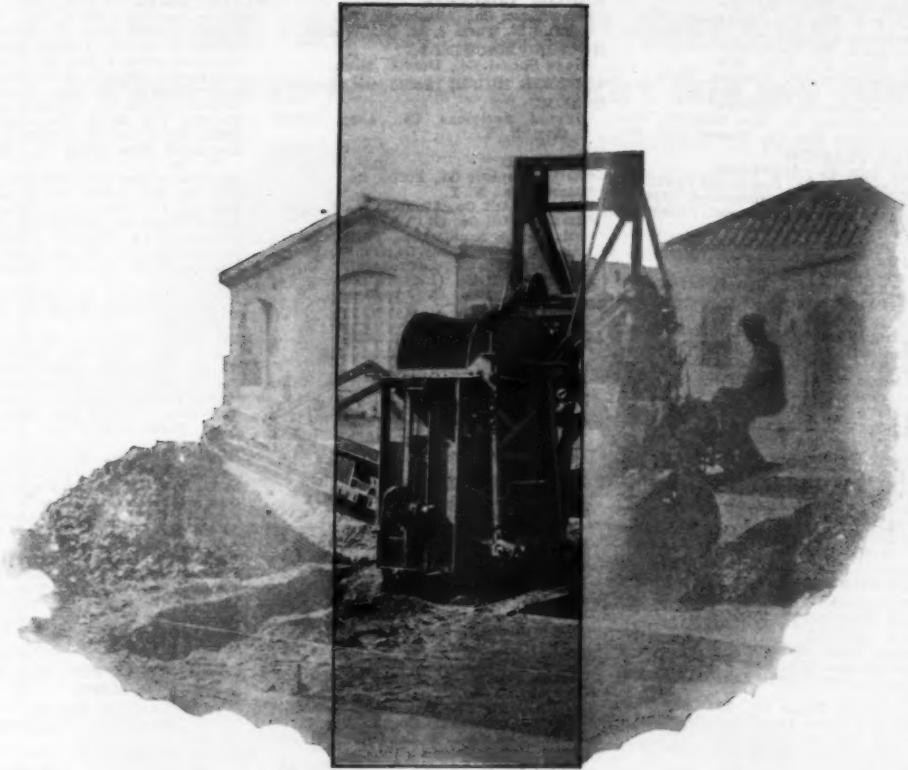
When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

# Where to Purchase

- Fries & Son Steel Const. & Eng. Co.**, Covington, Ky.  
**Panly Jail Bldg. Co.**, St. Louis, Mo.  
**Stewart Iron Wks. Co.**, Cincinnati, O.
- JOINTS, EXPANSION PAVING** (See Expansion Joint Material)
- JOINTS, FLEXIBLE PIPE** (See Flexible Joints)
- JOISTS, STEEL**  
**\*Truscon Steel Co.**, Youngstown, O.  
**Berger Mfg. Co.**, Canton, O.  
**Gendfre Steel Co.**, Youngstown, O.  
**Ingalis Steel Prod. Co.**, Birmingham, Ala.
- KETTLES, FOR ASPHALT AND TAR**  
**\*Acme Rd. Mach. Co.**, Frankfort, N. Y.  
**\*Aeroll Burner Co.**, West New York, N.J.  
**\*Barber Asphalt Co.**, Phila., Pa.  
**\*Connery & Co., Inc.**, Phila., Pa.  
**\*Good Rds. Mch. Co.**, Kennett Sq., Pa.  
**\*Jos. Monhorst Co.**, Cincinnati, O.  
**\*Kinney Mfg. Co.**, Boston, Mass.  
**\*Littleford Bros.**, Cincinnati, O.  
**\*Spears-Wells Mch. Co.**, Oakland, Cal.  
**\*Union Iron Works, Inc.**, Hoboken, N.J.  
**Chausse Oil Burner Co.**, Elkhart, Ind.  
**Huck Mfg. Co.**, B'klyn, N. Y.  
**Macloed Co.**, Cincinnati, O.  
**G. L. Stuebner Jr. Wks., Inc.**, Long Island City, N. Y.  
**Tarrant Mfg. Co.**, Saratoga Spgs., N.Y.  
**Universal Rd. Mach. Co.**, Kingston, N.Y.
- LANTERNS, CONTRACTORS'**  
**\*Alex. Milburn Co.**, Baltimore, Md.  
**DeRance Lantern & Stamping Co.**, Rochester, N. Y.  
**R. E. Dietz Co.**, N. Y.  
**Economy Elec. Lantern Co.**, Chicago.  
**Handlan, Buck Mfg. Co.**, St. Louis  
**Star Headlight & Lantern Co.**, Rochester, N. Y.
- LATH, METAL**  
**\*Truscon Steel Co.**, Youngstown, O.  
**Berger Mfg. Co.**, Canton, O.  
**Bostwick Steel Lath Co.**, Niles, O.  
**Consolidated Expanded Metals Co.**, Wheeling, W. Va.  
**Gendfre Steel Co.**, Youngstown, O.  
**Milwaukee Corr. Co.**, Milwaukee, Wis.  
**Northwestern Exp. Metal Co.**, Chicago  
**Penn. Metal Co.**, Boston, Mass.  
**Sykes Metal Lath and Roofing Co.**, Niles, O.  
**Youngstown Pressed Steel Co.**, Warren, O.
- LAWN MOWERS**  
**\*Kinney Standards, Inc.**, B'klyn, N. Y.  
**Chadborn & Coldwell Mfg. Co.**, New-Coldwell Lawn Mower Co., Newburgh, N.Y.  
**Gilson Mfg. Co.**, Port Washington, Wis.  
**Ideal Power Lawn Mower Co.**, Lansing, Mich.  
**Jacobson Mfg. Co.**, Racine, Wis.  
**Modern Mach. Wks.**, Milwaukee.  
**Penna. Lawn Mower Wks.**, Phila., Pa.  
**Phila. Lawn Mower Co.**, Phila., Pa.  
**S. P. Townsend Co.**, Bloomfield, N. J.  
**Worthington Mow Co.**, Stroudsburg, Pa.
- LAWN MOWER SHARPENERS**  
**Fate-Root-Heath Co.**, Plymouth, 6.
- LEADITE**  
**The Leadite Co.**, Phila., Pa.
- LEAD-MELTING FURNACES**  
**\*Aeroll Burner Co.**, West New York, N.J.  
**\*Littleford Bros.**, Cincinnati, O.  
**Canton Fdry. & Mch. Co.**, Canton, O.  
**Chicago Flexible Shaft Co.**, Chicago  
**Huck Mfg. Co.**, B'klyn, N. Y.  
**A. P. Smith Mfg. Co.**, E. Orange, N. J.
- LETTERING GUIDES**  
**Wood-Regan Inst. Co.**, So. Orange, N.J.
- LETTERS AND FIGURES, METAL**  
**Nigara Metal Stamp. Corp.**, Niagara Falls, N. Y.
- LIGHTS, CONTRACTORS'**  
**\*Alex. Milburn Co.**, Baltimore, Md.  
**General Elec. Co.**, Schenectady, N. Y.  
**Carbie Mfg. Co.**, Duluth, Minn.  
**Huck Mfg. Co.**, B'klyn, N. Y.  
**Macloed Co.**, Cincinnati, O.  
**Prest-O-Lite Co. Inc.**, N. Y.
- LIGHTING STANDARDS** (See Street Lamp Posts)  
**LIQUID CHLORINE**  
**Arnold, Hoffman & Co. Inc.**, N. Y.  
**Electro Bleaching Gas Co.**, N. Y.  
**Hooker Electrochemical Co.**, N. Y.  
**Matheson Alkali Works, Inc.**, N. Y.  
**Penna. Salt Mfg. Co.**, Phila., Pa.
- LOADERS, GRAVEL, WAGON, CAR, ETC.**  
**\*Barber-Greene Co.**, Aurora, Ill.  
**\*Bay City Dredge Wks.**, Bay City, Mich.  
**\*Erie Steam Shovel Co.**, Erie, Pa.  
**\*Chicago Automatic Conv. Co.**, Chicago  
**\*F. S. Mfg. Co.**, New Holstein, Wis.  
**\*Gallon Jr. Wks. & Mfg. Co.**, Gallon, O.  
**\*Geo. Haies Mfg. Co.**, N. Y.  
**\*Helsel Stl. Form & Ir. Co.**, Warren, O.  
**\*Link-Belt Co.**, Chicago  
**\*Northern Conveyor Co.**, Janesville, Wis.  
**\*Russell Grader Mfg. Co.**, Minneapolis  
**\*Sauerman Bros.**, Chicago  
**\*Spears-Wells Mch. Co.**, Oakland, Cal.  
**\*Star Drilling Mach. Co.**, Akron, O.  
**Bonney Supply Co. Inc.**, Rochester, N.Y.  
**Brown Hoisting Mch. Co.**, Cleveland  
**Burch Corp'n.**, Crestline, O.  
**Conant Mach. Co.**, Concord, N.H.  
**Fairfield Eng. Co.**, Marion, O.  
**Gifford-Wood Co.**, Hudson, N. Y.  
**Jeffrey Mfg. Co.**, Columbus, O.  
**Kent Mach. Co.**, Kent, O.  
**Hughes-Keehan Co.**, Mansfield, O.  
**Lee Trailer & Body Co.**, Plymouth, Ind.  
**Leasman Leader Mfg. Co.**, Des Moines, Ia.  
**Logan Co.**, Louisville, Ky.  
**Nelson Iron Wks.**, Pascale, N. J.  
**New Holland Mch. Co.**, N. Holland, Pa.  
**Portable Machinery Co.**, Clifton, N. J.  
**H. B. Sackett Screen & Chute Co.**, Chicago  
**Specialty Eng. Co.**, Phila., Pa.  
**Universal Rd. Mach. Co.**, Kingston, N.Y.  
**Weller Mfg. Co.**, Chicago
- LOCKERS, STEEL**  
**Durand Steel Locker Co.**, Chicago  
**Hart & Hutchinson Co.**, N. Britain, Ct.  
**Lyon Metallic Mfg. Co.**, Aurora, Ill.  
**Fred. Medart Mfg. Co.**, St. Louis, Mo.
- LOCOMOTIVES, FOR CONTRACTORS, ETC.**  
**\*Brookville Truck & Tractor Co.**, Brookville, Pa.  
**\*Geo. D. Whitcomb Co.**, Rochelle, Ill.  
**Baldwin Loc. Wks.**, Phila., Pa.  
**Davenport Loc. Wks.**, Davenport, Ia.  
**Fate-Root-Heath Co.**, Plymouth, O.  
**Helsier Locomotive Wks.**, Erie, Pa.  
**Mid-West Locomotive Wks.**, Cincinnati  
**Lima Loc. Wks.**, Lima, O.  
**Milwaukee Loc. Mfg. Co.**, Milwaukee  
**Plymouth Loc. Wks.**, Plymouth, O.  
**H. K. Porter Co.**, Pittsburgh, Pa.  
**Vulcan Iron Wks.**, Wilkes-Barre, Pa.  
**Westinghouse Electric & Mfg. Co.**, E. Pittsburgh, Pa.
- LUBRICANTS**  
**\*D-A Lubricant Co.**, Ind'p'l's, Ind.  
**\*Dixey, Inc.**, St. Louis  
**Texas Co.**, New York
- MANHOLE COVERS** (See Castings)
- METAL LATH** (See Lath)
- METAL ROOFING** (See Roofing)
- METER BOXES**  
**Builders Iron Foundry**, Providence, R.I.  
**H. W. Clark Co.**, Mattoon, Ill.  
**Clarksville Fdry. & Mach. Co.**, Clarksville, Tenn.  
**J. B. Clow & Sons**, Chicago  
**Columbian Ir. Wks.**, Chattanooga, Tenn.  
**Ford Meter Box Co.**, Wabash, Ind.  
**Mueller Co.**, Decatur, Ill.  
**J. S. Schofield's Sons Co.**, Macon, Ga.
- METER COUPLINGS**  
**\*Neptune Meter Co.**, N. Y.  
**\*Union Water Meter Co.**, Worcester, Mass.  
**H. W. Clark Co.**, Mattoon, Ill.  
**Ford Meter Box Co.**, Wabash, Ind.  
**Hersey Mfg. Co.**, So. Boston, Mass.  
**Mueller Co.**, Decatur, Ill.  
**Pittsburgh Equitable Meter Co.**, Pittsburgh, Pa.
- METER TESTERS**  
**\*Neptune Meter Co.**, N. Y.  
**H. W. Clark Co.**, Mattoon, Ill.  
**Ford Meter Box Co.**, Wabash, Ind.  
**National Meter Co.**, N. Y.  
**Pittsburgh Equitable Meter Co.**, Pittsburgh, Pa.
- METERS, ELECTRIC (WATTHOUR)**  
**Duncan Elec. Mfg. Co.**, LaFayette, Ind.  
**General Elec. Co.**, Schenectady, N. Y.  
**Sangamo Elec. Co.**, Springfield, Ill.  
**Westinghouse Electric & Mfg. Co.**, E. Pittsburgh, Pa.
- METERS, GAS**  
**American Meter Co.**, N. Y.  
**Bailey Meter Co.**, Cleveland, O.  
**Bailey Iron Fdry.**, Providence, R. I.  
**Cleveland Gas Meter Co.**, Cleveland, O.  
**Pittsburgh Equitable Meter Co.**, Pittsburgh, Pa.
- METERS, WATER, OIL & GASOLINE**  
**\*Neptune Meter Co.**, N. Y.  
**\*Union Water Meter Co.**, Worcester, Mass.  
**Badger Meter Mfg. Co.**, Milwaukee  
**Buffalo Meter Co.**, Buffalo, N. Y.  
**Federal Meter Corp'n.**, E. Orange, N. J.  
**Gannon Meter Co.**, Newark, N. J.  
**Hersey Mfg. Co.**, Boston, Mass.  
**National Meter Co.**, N. Y.  
**Pittsburgh Equitable Meter Co.**, Pittsburgh, Pa.  
**Thomson Meter Corp.**, New York  
**Worthington Pump & Mch. Corp.**, N.Y.
- METERS, WATER (VENTURI TYPE)**  
**Builders Iron Fdry.**, Providence, R. I.  
**Simplex Valve & Meter Co.**, Phila., Pa.
- MICROMETERS**  
**\*Lufkin Rule Co.**, Saginaw, Mich.
- MIXERS, CONCRETE** (See Concrete Mixers)  
**MIXERS, GROUT**  
**\*Lakewood Eng. Co.**, Cleveland, O.  
**\*T. L. Smith Co.**, Milwaukee, Wis.  
**\*Union Iron Wks. Inc.**, Hoboken, N. J.  
**Kent Mach. Co.**, Kent, O.
- MIXERS, HOT**  
**\*Barber Asphalt Co.**, Phila., Pa.
- MIXERS, MORTAR**  
**\*Atlas Eng. Co.**, Milwaukee.  
**\*Blaw-Knox Co.**, Pittsburgh, Pa.  
**\*Brystone Mfg. Co.**, Cambridge Spgs., Pa.  
**\*Helsel St. Form & Ir. Co.**, Warren, O.  
**\*Jaeger Machine Co.**, Columbus, Ohio  
**\*Lakewood Eng. Co.**, Cleveland, O.  
**\*Ransome Con. Mch. Co.**, Dunellen, N.J.  
**\*T. L. Smith Co.**, Milwaukee, Wis.  
**\*Standard Scale & Supply Corp.**, Pittsburgh, Pa.  
**Anchor Mfg. Co.**, Chicago

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*

**THE BARBER-GREENE IS THE ONLY DITCHER THAT DIGS STRAIGHT DOWN**



## Straight Down---to New Low Costs

**V**ERTICAL boom construction makes the Barber-Greene so compact and nimble that it cuts service laterals without shovel help—at a cost far below that of hand labor.

—so speedy that it has ripped off a mile a day on oil-field pipe lines.

—so husky that it cuts through Florida's coral rock without breaking a shaft.

As for costs—a Texas Barber-Greene dug over 9,000 feet of gas trench at 4c. above the cost of backfilling.

*There are few words in this book—it's too full of pictures and cost records that illustrate a new field of contracting profits. A post-card brings your copy of "Ditching Snapshots and Records." Send it today.*



**BARBER-GREENE COMPANY 485 W. PARK AVE., AURORA, ILLINOIS**



## Barber-Greene Ditcher

*Representatives in 50 Cities*

DISC FEED LOADERS	VERTICAL BOOM DITCHERS
STANDARDIZED PORTABLE	AND PERMANENT BELT CONVEYORS
SNOW LOADERS	CAR UNLOADERS COAL LOADERS

**Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.**

# Where to Purchase

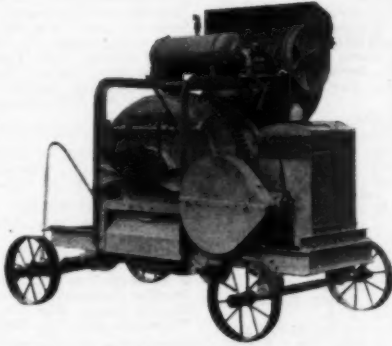
- Archer Iron Wks., Chicago.  
C. H. & E. Mfg. Co., Milwaukee, Wis.  
Construction Machy. Co., Waterloo, Ia.  
Kent Mach. Co., Kent, O.  
Kiel Mach. Co., Kiel, Wis.  
Knickerbocker Co., Jackson, Mich.  
Lansing Co., Lansing, Mich.  
Marsh-Capron Co., Chicago  
Meili-Blumberg Co., New Holstein, Wis.  
Talbot-Flood Mfg. Co., Kansas City, Mo.
- MIXERS, PLASTER**  
Atlas Eng. Co., Milwaukee.  
\*Blystone Mfg. Co., Cambridge Spgs., Pa.  
\*Jaeger Machine Co., Columbus, Ohio  
\*Standard Scale & Supply Co., Pittsburgh  
Anchor Mfg. Co., Chicago.  
Essick & Co., Los Angeles, Cal.  
Knickerbocker Co., Jackson, Mich.  
Marsh-Capron Co., Chicago  
Meili-Blumberg Co., New Holstein, Wis.  
Talbot-Flood Mfg. Co., Kansas City, Mo.
- MORTAR BOXES**  
\*General Wheelbarrow Co., Cleveland, O.  
\*Haltzel St. Form & Ir. Co., Warren, O.  
\*Jes. Honhorst Co., Cincinnati, O.  
\*Littleford Bros., Cincinnati  
Anchor Mfg. Co., Chicago, Ill.  
Canton Art Metal Co., Canton, O.
- MORTISERS, ELECTRIC**  
R. L. Carter Co., Phoenix, N. Y.  
Wappat Gear Wks., Pittsburgh.
- MOTORCYCLES**  
Cleveland Motorcycle Co., Cleveland, O.  
Excelsior Motor Mfg. & Supply Co., Chicago  
Harley-Davidson Motor Co., Milwaukee  
Indian Motorcycle Co., Springfield, Mass.  
**MOTORS, ELECTRIC** (See Electric Generators and Motors)
- MOTORS, GASOLINE** (See Engines, Gas and Gasoline)
- MOTOR TRUCKS**  
\*Graham Bros., Detroit  
\*Mack Trucks, Inc., New York  
Amer.-La France Fire Eng. Co., Elmira, N. Y.  
Acme Motor Truck Co., Cadillac, Mich.  
Atterbury Motor Car Co., Buffalo, N. Y.  
Autocar Co., Ardmore, Pa.  
Beasmer Motor Truck Co., Grove City, Pa.  
Brooklyn Motor Truck Co., Cortland, N. Y.  
Clydesdale Motor Truck Co., Clyde, O.  
Commerce Motor Trk. Co., Ypsilanti, Mich.  
Diamond T. Motor Car Co., Chicago  
Duplex Truck Co., Lansing, Mich.  
Federal Motor Truck Co., Detroit  
Ford Motor Co., Detroit  
Four Wheel Drive Auto Co., Clintonville, Wis.  
Garford Truck Co., Lima, O.  
General Motors Truck Co., Chicago.  
Gramm Motors, Inc., Lima, O.  
The Hug Co., Highland, Ill.  
Indiana Truck Corp., Marion, Ind.  
Int. Harvester Co., Chicago  
Kelly Springfield Truck & Bus Corp., Springfield, O.  
Larrabee-Deyo Motor Tr. Co., Binghamton, N. Y.  
Leedinghaus-Espenchied Wagon Co., St. Louis.  
Pierce-Arrow Motor Car Co., Buffalo  
Republic Truck Sales Corp., Alma, Mich.  
Relays Motors Corp., Wabash, Ind.  
Standard Motor Truck Co., Detroit  
Sterling Motor Truck Co., Milwaukee  
Stewart Motor Corp., Buffalo, N. Y.  
Toppins Trac. Truck Co., Appleton, Wis.  
Tramie Motor Tr. Co., St. Louis, Mo.  
United Motor Products Co., Grand Rapids, Mich.  
U. S. Motor Truck Co., Cincinnati, O.  
Walter Motor Truck Co., L. I. City, N. Y.  
White Co., Cleveland  
Yellow Truck & Coach Mfg. Co., Chicago
- MOULDS, CONCRETE**  
\*Blaw-Knox Co., Pittsburgh, Pa.  
\*Haltzel St. Form & Ir. Co., Warren, O.
- MUCKING MACHINES**  
Hoar Shovel Co., Duluth, Minn.
- NUMBERS, HOUSE** (See House Numbers)
- OAKUM**  
Oxweld Acetylene Co., Long Island City, N. Y.
- OILS, ROAD**  
\*Barber Asphalt Co., Phila., Pa.  
\*Barrett Co., N. Y.  
\*Standard Oil Co. (Indiana), Chicago  
\*Standard Oil Co. (N. Y.), N. Y.  
Atl. Ref. & Asph. Corp., Phila., Pa.  
Headley Good Roads Co., Phila., Pa.  
Pioneer Asph. Co., Lawrenceville, Ill.  
Standard Oil Co. (La.), N. Orleans, La.  
Standard Oil Co. (N. J.), Newark, N. J.  
Texas Company, N. Y.
- OKY-ACETYLENE APPARATUS**  
\*Alex. Milburn Co., Baltimore, Md.  
Carbie Mfg. Co., Duluth.  
Oxweld Acetylene Co., Long Island City, N. Y.
- PACKING, WATER PIPE**  
The Leadite Co., Phila., Pa.  
United Lead Company, N. Y.
- PAINTING MACHINERY**  
\*Alex. Milburn Co., Baltimore, Md.  
Binks Spray Eq. Co., Chicago  
Chicago Pneum. Tool Co., New York  
De Vilbiss Mfg. Co., Toledo, O.  
Eclipse Air Brush Co., Newark, N. J.  
W. N. Matthews Corp., St. Louis  
Fasche Air Brush Co., Chicago  
Simons "Airt Spray Brush Co., Dayton, O.  
Sprace Painting Equip. Co., Boston
- PAINTS, METAL PROTECTION**  
\*Barber Asphalt Co., Phila., Pa.  
\*Barrett Co., N. Y.  
\*Philip Carey Co., Cincinnati, O.  
\*Jos. Dixon Crucible Co., J. City, N. J.  
Acme White Ld. & Col. Wks., Detroit  
Berry Bros., Detroit  
Cook Paint & Varnish Co., K. City, Mo.  
Detroit Graphite Co., Detroit  
Detroit White Lead Wks., Detroit  
E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.  
Euclid Chemical Co., Cleveland, O.  
Minwax Co., N. Y.  
Protaxol Corp., Kenilworth, N. J.  
Ruberoid Co., N. Y.  
Sennet-Solvay Co., N. Y.  
Servicead Products Corp., Chicago  
Sherwin-Williams Co., Cleveland, O.  
L. Sonneborn Sons, N. Y.  
Toch Bros., N. Y.  
Tropical Paint & Oil Co., Cleveland, O.  
Trascon Laboratories, Detroit
- PAPERS, BLUE PRINT**  
Ind'p'ls Blue Print & Supply Co., Ind'p'ls, Ind.
- PARK BENCHES**  
\*Van Dorn Iron Wks. Co., Cleveland  
Bausman Mfg. Co., Millersville, Pa.  
Logan Co., Louisville, Ky.  
Fred J. Meyers Mfg. Co., Hamilton, O.  
Stewart Iron Wks. Co., Cincinnati, O.
- PAVEMENT BREAKERS** (See Breakers)
- PAVING AND ROAD ROLLERS** (See Road and Paving Rollers)
- PAVING BLOCKS, CROSCOTED WOOD** (See Croscoted Blocks)
- PAVING BRICK**  
Alton Brick Co., Alton, Ill.  
Buckeye Shale Brick Co., Cleveland, O.  
Buffalo Brick Co., Buffalo, Kans.  
Cleveland Brick & Clay Co., Cleveland, O.  
Collinwood Shale Brick Co., Cleveland, O.  
Corry Brick & Tile Corp., Corry, Pa.  
Crescent Brick Co., Pittsburgh, Pa.  
Georgia Vit. Brick Co., Augusta, Ga.  
Globe Brick Co., E. Liverpool, O.  
Hammond Fire Brick Co., Fairmount, W. Va.  
Hysylvania Coal Co., Columbus, O.  
Hocking Val. Brick Co., Columbus, O.  
McAvoy Vit. Brick Co., Phila., Pa.  
Mayer Brick Co., Bridgeville, Pa.  
Metropolis Pav. Br. Co., Pittsb'g, Kan.  
Metropolitan Pav. Br. Co., Canton, O.  
Mineral Wells Br. Co., Mineral Wells, Tex.  
Moberly Pav. Br. Co., Moberly, Mo.  
Murphysboro Pav. Brick Co., Murphysboro, Ill.  
Nelsonville Brick Co., Nelsonville, O.  
Patton Clay Mfg. Co., Patton, Pa.  
Faxton Brick Co., Watsonstown, Pa.  
Peoples Pav. Br. Co., Portsmouth, O.  
Peoria Brick & Tile Co., Peoria, Ill.  
Purinton Pav. Br. Co., Galesburg, Ill.  
Rose Shale Brick Co., Veversburg, Ind.  
Russell Clay Mfg. Co., Alton, Ala.  
So. Clay Mfg., Chattanooga, Tenn.  
Spfld. Pav. Br. Co., Springfield, Ill.  
Sterling Brick Co., Olean, N. Y.  
Streator Clay Mfg. Co., Streator, Ill.  
Terre Haute Vit. Brick Co., Terre Haute, Ind.  
Thornton Fire Brick Co., Clarksburg, W. V.  
Thurber Brick Co., Thurber, Tex.  
Toronto Fire Clay Co., Toronto, O.  
Trinidad & T. Co., Trinidad, O.  
United Clay Prod. Corp., Kansas City  
West'n Shale Prod. Co., Ft. Scott, Kan.  
Westport Pav. Br. Co., Westport, Md.
- PAVING MACHINERY** (See Road and Paving Machinery)
- PAVING GUARDS, STEEL**  
W. S. Godwin Co., Baltimore, Md.
- PAVING MATERIALS** (See "Asphalt," "Paving Brick," "Granite Block," etc.)
- PAVING MIXERS** (See Concrete Mixers)
- PAVING TOOLS**  
\*Aeroli Burner Co., West New York, N. J.  
\*Barber Asphalt Co., Phila., Pa.  
\*Connery & Co., Phila., Pa.  
\*Jos. Honhorst Co., Cincinnati, O.  
\*Littleford Bros. Co., Cincinnati, O.  
\*Unifor Iron Wks., Inc., Hoboken, N. J.  
\*Warren Bros. Co., Boston  
W. H. Anderson Tl. & Sup. Co., Detroit  
Chausse Oil Burner Co., Elkhart, Ind.  
F. D. Cummer & Sons Co., Cleveland, O.  
Hauck Mfg. Co., Bklyn, N. Y.
- PERFORATED METALS**  
\*Littleford Bros., Cincinnati  
Allis-Chalmers Mfg. Co., Milwaukee  
Hendrick Mfg. Co., Carbondale, Pa.
- PICKS**  
Beall Tool Co., E. Alton, Ill.  
Hubbard Co., Pittsburgh, Pa.  
Independent Pneum. Tool Co., Chicago  
Iron City Tool Wks., Pittsburgh  
Klein-Logan Co., Pittsburgh  
Oliver Ir. & St. Corp., Pittsburgh, Pa.  
Verona Tool Wks., Verona, Pa.  
Warren Tool & Forge Co., Warren, O.  
Warwood Tool Co., Wheeling, W. Va.  
Wyoming Shovel Wks., Wyoming, Pa.
- PILE DRIVERS**  
\*Clyde Ir. Wks. Sales Co., Duluth, Minn.  
\*Erie Steam Shovel Co., Erie, Pa.

If you find any errors or omissions in this Where to Purchase list, please send corrections to  
CONTRACTORS & ENGINEERS MONTHLY



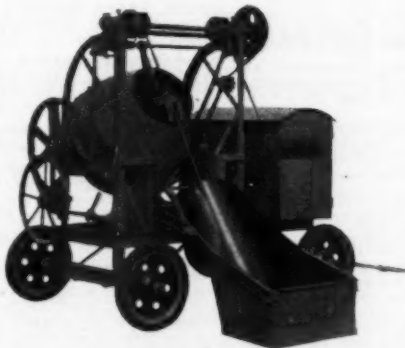
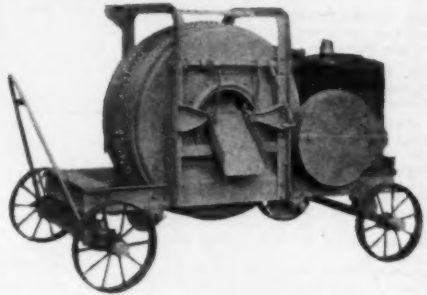
## **"THE STANDARD" MIXERS**

### **A COMPLETE LINE FOR EVERY MIXING JOB**



**"The STANDARD" 7-S Low Charger**  
An ideal unit for mixing plaster as well as concrete and mortar.

**"The STANDARD" 7-S Power Loader**  
For general construction work—light in weight—strong, quick loading—quick mixing and quick discharge. Equipped with the well known "STANDARD" narrow drum in which all the action is mixing action.



**"The STANDARD" Trailer Type Tilting Mixer**  
The ideal one-half-bag mixer for general contract work. Mixes mortar and plaster as well as concrete.

**"The STANDARD" 5-M Mixer**  
An all-steel portable machine designed primarily for jobs where a full-bag mixer is required.



*Write for complete specifications covering the complete line of "THE STANDARD" Mixers.*

**THE STANDARD SCALE & SUPPLY CORPORATION**  
**PITTSBURGH** **PENNA.**

**DISTRICT OFFICES**

New York: 145 Chamber Street  
Philadelphia: 510 Arch Street

Cleveland: 721 St. Clair Ave., N. E.  
Chicago: 1840 Michigan Ave.

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# Where to Purchase

\*McKiernan-Terry Drill Co., N. Y.  
 \*Mead-Morrison Mfg. Co., E. Boston  
 \*Union Iron Wks., Inc., Hoboken, N. J.  
 Industrial Wks., Bay City, Mich.  
 Lidgerwood Manufacturing Co., N. Y.  
 McMyler Interstate Co., Cleveland, O.

## PILE-HAMMERS, STEAM

\*Clyde Ir. Wks. Sales Co., Duluth, Minn.  
 \*McKiernan-Terry Drill Co., N. Y.  
 \*Union Iron Wks., Inc., Hoboken, N. J.  
 \*Wemlinger, Inc., N. Y.  
 Industrial Wks., Bay City, Mich.  
 Ntl. Hoisting Eng. Co., Harrison, N. J.  
 Vulcan Iron Wks., Chicago

## PILING, CONCRETE

MacArthur Conc. Pile & F'd'n. Co., N.Y.  
 Raymond Conc. Pile Co., N. Y.

## PILING, INTERLOCKING STEEL

Bethlehem Steel Co., Bethlehem, Pa.  
 Carnegie Steel Co., Pittsburgh, Pa.

## PILING, STEEL SHEET

\*Wemlinger, Inc., N. Y.  
 Bethlehem Steel Co., Bethlehem, Pa.

## PIPE CAST IRON

\*Central Fdry. Co., N. Y.  
 \*U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
 Am. Cast Iron Pipe Co., Birmingham, Ala.  
 J. B. Clow & Sons, Chicago  
 Donaldson Iron Co., Emaus, Pa.  
 John Fox & Co., N. Y.  
 Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
 Lynchburg Fdry. Co., Lynchburg, Va.  
 McWane C. I. Pipe Co., Birmingham, Ala.  
 Nat. C. I. Pipe Co., Birmingham, Ala.  
 Warren Fdry. & Pipe Co., N. Y.  
 R. D. Wood & Co., Phila., Pa.

## PIPE, CULVERT (See Culverts)

## PIPE, LEAD

United Lead Company, N. Y.

## PIPE, REINFORCED CONCRETE

\*Newark Conc. Pipe Co., Newark, N. J.  
 Concrete Prod. Co., Pittsburgh, Pa.  
 Core Joint Conc. Pipe Co., Baltimore  
 Independent Conc. Pipe Co., Indianapolis  
 Lock Joint Pipe Co., Ampere, N. J.

## PIPE, RIVETED STEEL OR IRON

\*Connery & Co., Inc., Phila., Pa.  
 \*Jos. Honshert Co., Cincinnati, O.  
 \*Littleford Bros., Cincinnati, O.  
 Abendroth & Root Mfg. Co., Newburgh, N. Y.  
 American Spiral Pipe Wks., Chicago  
 Biggs Boiler Wks., Akron.  
 Canton Culvert & Silo Co., Canton, O.  
 Chatta. Boiler & Tl. Co., Chatta., Tenn.  
 Chicago Bridge & Ir. Wks., Chicago  
 E. Jersey Pipe Co., N. Y.  
 Hamond Ir. Wks., Warren, Pa.  
 R. Hardesty Mfg. Co., Denver  
 Lancaster Iron Wks., Lancaster, Pa.  
 Pittsburgh-Des Moines Sil. Co., Pittsburgh, Pa.  
 Tippet & Wood, Phillipsburg, N. J.  
 Weller Mfg. Co., Chicago

## PIPE, STEEL

Central Tube Co., Pittsburgh, Pa.  
 E. Jersey Pipe Co., N. Y.  
 R. Hardesty Mfg. Co., Denver  
 Jones & Laughlin Sil. Co., Pittsburgh  
 National Tube Co., Pittsburgh  
 Republic Ir. & Sil. Co., Youngstown, O.  
 South Chester Tube Co., Chester, Pa.  
 Spang-Chalfont & Co., Pittsburgh, Pa.  
 Wheeling Sil. Corp., Wheeling, W. Va.  
 Youngstown Sheet & Tube Co., Youngstown, O.

## PIPE, WOOD

Amer. Wood Pipe Co., Tacoma, Wash.

Patterson-Williams Co., San Jose, Cal.  
 A. G. Spaulding & Bros., Chicopee, Mass.  
 Cascade Pipe & Flume Co., Seattle, Wash.  
 Federal Tank & Pipe Co., Seattle, Wash.  
 Mich. Pipe Co., Bay City, Mich.  
 Pacific Pipe & Tank Co., S. Francisco.  
 Redwood Mfrs. Co., San Francisco  
 Standard Wd. Pipe Co., Williamsport, Pa.  
 A. Wyckoff & Sons Co., Elmira, N. Y.

## PIPE, WROUGHT IRON

A. M. Byers Co., Pittsburgh, Pa.  
 Reading Iron Co., Reading, Pa.

## PIPE BENDING MACHINES

Am. Pipe Bending Mach. Co., Boston  
 Walworth Mfg. Co., Boston  
 Watson-Stillman Co., New York.

## PIPE COVERING

### AIRCCELL

\*Philip Carey Co., Cincinnati, O.  
 Ehret Mag. Mfg. Co., Valley Forge, Pa.  
 Johns-Manville, Inc., N. Y.  
 Keasbey & Mattison Co., Ambler, Pa.  
 Ntl. Asbestos Co., Jersey City, N. J.  
 Norristown Mag. & Asb. Co., Norristown, Pa.  
 Sall Mountain Co., Chicago  
 H. F. Watson Co., Erie, Pa.

### 85 PER CENT MAGNESIA

\*Philip Carey Co., Cincinnati, O.  
 Ehret Mag. Mfg. Co., Valley Forge, Pa.  
 Johns-Manville, Inc., N. Y.  
 Keasbey & Mattison Co., Ambler, Pa.  
 Norristown Mag. & Asb. Co., Norristown, Pa.

## WOOD

Redwood Mfrs. Co., San Francisco  
 A. Wyckoff & Son Co., Elmira, N. Y.

## PIPE CUTTERS (See Cutters, Pipe, Hand)

## PIPE FITTINGS

\*Central Fdry. Co., N. Y.  
 \*U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
 Amer. C. I. Pipe Co., Birmingham, Ala.  
 Builders Iron Fdry., Providence, R. I.  
 J. B. Clow & Sons, Chicago  
 Crane Co., Chicago  
 Donaldson Iron Co., Emaus, Pa.  
 Lunkenheimer Co., Cincinnati, O.  
 Ntl. C. I. Pipe Co., Birmingham, Ala.  
 Reading Sil. Casting Co., Inc., Bridgeport, Conn.  
 Warren Fdry. & Pipe Co., N. Y.  
 R. D. Wood & Co., Phila., Pa.

## PIPE HANDLING MACHINERY

Taylor Port. Sil. Derrick Co., Chicago

## PIPE JOINT COMPOUND (Sewer)

\*Philip Carey Co., Cincinnati, O.  
 \*Jos. Dixon Crucible Co., Jersey City, N. J.

## \*Pacific Flush Tank Co., Chi. and N. Y.

G. K. Sales Co., Macungie, Pa.  
 Leadrite Company, Inc., Phila., Pa.  
 Ruberoid Co., N. Y.  
 Texas Co., New York  
 Waring-Underwood Co., Phila., Pa.

## PIPE JOINT MATERIAL (Cast Iron)

Hydraulic Development Co., Boston  
 The Leadrite Co., Phila., Pa.  
 United Lead Co., N. Y.

## PIPE PLUGS

\*Safety Gas Main Stopper Co., Brooklyn, N. Y.

## PIPE PUSHERS

Duff Mfg. Co., Pittsburgh.  
 Easy Mfg. Co., Lincoln, Neb.  
 Grant Mfg. Co., Council Bluffs, Ia.

## PLAYGROUND APPARATUS

American Playground Device Co., Anderson, Ind.  
 Chicago Gym. Equip. Co., Chicago  
 Everwear Mfg. Co., Springfield, O.  
 Giant Mfg. Co., Council Bluffs, Ia.  
 Hill-Standard Co., Anderson, Ind.  
 Fred. Medart Mfg. Co., St. Louis, Mo.  
 Mitchell Mfg. Co., Milwaukee

## PLUMBERS, CONTRACTORS'

\*Austin-West'n Ed. Mach. Co., Chicago  
 \*Caterpillar Trac. Co., San Leandro, Cal.  
 \*Gallon Ir. Wks. & Mfg. Co., Gallon, O.  
 \*Russell Grader Mfg. Co., Minneapolis  
 J. D. Adams & Co., Ind'p'lis, Ind.  
 American Steel Scraper Co., Sidney, O.  
 Burch Corp'n., Crestline, O.  
 Deere & Co., Moline, Ill.  
 C. D. Edwards Mfg. Co., Albert Lee, Minn.  
 International Harvester Co., Chicago  
 Roderick Lean Mfg. Co., Mansfield, O.  
 Moline Implement Co., Moline, Ill.  
 Oliver Chilled Plow Wks., S. Bend, Ind.  
 Sidney Steel Scraper Co., Sidney, O.  
 Shusser-McLean Scraper Co., Sidney, O.  
 Western Wheeled Scraper Co., Aurora, Ill.

Wiard Plow Co., Batavia, N. Y.

## PLUMBS, ROOPER & GRADING

\*Ted Carr & Co., Chicago.

Wiard Plow Wks., Batavia, N. Y.

## \*PLUMBING SUPPLIES

J. B. Clow & Sons, Chicago  
 Crane Co., Chicago  
 Glauber Brass Mfg. Co., Cleveland, O.  
 Imperial Brass Mfg. Co., Chicago.  
 J. L. Mott Iron Wks., N. Y.  
 Mueller Company, Decatur, Ill.  
 Rundle-Spence Mfg. Co., Milwaukee  
 Walworth Mfg. Co., Boston

## \*PNEUMATIC CONCRETE PLACERS

\*Ransome Concrete Machy. Co., Dunellen, N. J.

## \*PNEUMATIC GROUT MIXERS & PLACERS

\*Ransome Concrete Machy. Co., Dunellen, N. J.

## POLES, STEEL STRUCTURAL

\*Blaw-Knox Co., Pittsburgh, Pa.  
 Elec. Ry. Equip. Co., Cincinnati, O.

## PORTABLE BUILDINGS

\*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Littleford Bros., Cincinnati, O.  
 \*Truscon Steel Co., Youngstown, O.

## PORTABLE STEEL DERRICKS (See Derricks, Steel Portable)

## PORTABLE WOOD WORKERS

\*Amer. Saw Mill Machy. Co., Hackettstown, N. J.  
 Jaeger Portable Power Corp., Detroit

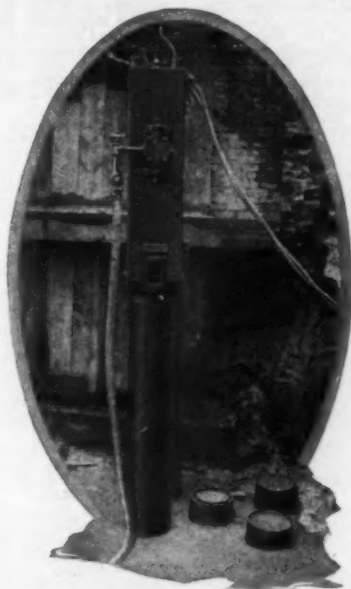
## PORTLAND CEMENT (See Cement)

## POSTHOLE DIGGERS

\*Ransome Conc. Machy. Co., Dunellen, N.J.  
 Amer. Shov. & Stamp Co., Lorain, O.  
 Baldwin Tl. Wks., Parkersburg, W. Va.  
 Brown Mfg. Co., Zanesville, Ohio.  
 The Buda Co., Harvey, Ill.  
 Champion Tl. & Hdie. Wks., Evert, Mich.  
 Columbus Handle & Tool Corp., Columbus, Ind.  
 Henry Diaston & Sons, Inc., Philadelphia, Pa.  
 Empire Plow Co., Cleveland, O.  
 Four Wheel Drive Auto Co., Clintonville, Wis.  
 Franklin Equip. Co., Monticello, Ia.  
 Gibbs Mfg. Co., Canton, O.  
 Gowanda Agr. Wks., Gowanda, N. Y.  
 Hubbard & Co., Pittsburgh, Pa.  
 Iron City Tool Works, Pittsburgh, Pa.  
 Iwan Bros., South Bend, Ind.  
 Klein-Logan Co., Pittsburgh, Pa.  
 P. E. Kohler Co., Canton, O.  
 Leetonia Tool Co., Leetonia, O.  
 North Indianapolis Cradle Wks., Indianapolis, Ind.  
 Ohio Cultivator Co., Bellevue, O.  
 Oliver Iron & Sil. Corp., Pittsburgh, Pa.  
 W. H. Osmondson, Perry, Iowa.  
 Peck Fdry. & Mfg. Co., Le Mars, Ia.  
 Seymour Mfg. Co., Seymour, Ind.  
 G. A. Swineford Co., Canton, Ohio

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*

*These pipe piles were 40 feet long, made up of 20-foot lengths coupled together. Note the special cap used. With this attachment the pile hammer rests firmly on the pipe, driving it without upsetting or crimping the top.*



## Driving Pipe Piles with McKiernan-Terry Pile Hammers

One contractor drove ten miles of pipe piles in six months with McKiernan-Terry Pile Hammers. Another, working on a large department store foundation, drove 50,000 feet of 16-inch pipe, 65 feet below street level, with two McKiernan-Terry Hammers.

The machines used most frequently for this work are No. 6 (2900 pounds), No. 7 (5000 pounds), and No. 9-B-2 (6760 pounds).

The new McKiernan-Terry Catalog contains several interesting pictures of pipe pile foundation work; also other interesting job pictures—*one hundred* altogether—of all other kinds of pile driving, from the heaviest to the lightest. Send for this 100-page book (on your letterhead, please). Or, if you wish, we will gladly send our local representative.

**McKIERNAN-TERRY**  
19 Park Row, New York

**DRILL COMPANY**  
Agents in Principal Cities



# McKiernan-Terry

DOUBLE-ACTING RAPID-DRIVING  
**PILE HAMMERS**

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

# Where to Purchase

- Verona Tool Works, Pittsburgh, Pa.  
 Warren Tool & Forge Co., Warren, O.  
 Wood Shovel & Tool Co., Piqua, Ohio  
 Western St. & Ir. Wks., De Pere, Wis.  
 Wyoming Shovel Works, Wyoming, Pa.
- POWDER (See Explosives)**
- POWER PLANTS, INDUSTRIAL**  
 \*Alamo Engine Co., Hillsdale, Mich.  
 \*Climax Eng. Co., Clinton, Ia.  
 \*Continental Motors Corp., Muskegon, Mich.  
 \*Hercules Motors Corp., Canton, O.  
 \*Waukesha Motor Co., Waukesha, Wis.  
 Buda Co., Harvey, Ill.  
 Hinkley Motors, Inc., Detroit  
 Sanderson-Cyclone Drill Co., Orrville, O.  
 Serval Mfg. Co., Evansville, Ind.  
 Wisconsin Motor Co., Milwaukee
- PULLING MACHINES**  
 \*Clyde Ir. Wks. Sales Co., Duluth, Minn.  
 John Waldron Corp., New Brunswick, N. J.
- PUMP JACKS**  
 \*John Lauson Mfg. Co., New Holstein, Wis.
- PUMPERS, FORD**  
 American Steam Pump Co., Battle Creek, Mich.  
 Jaeger Portable Machy. Co., Detroit.
- PUMPS, AIR LIFT**  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Sullivan Mach. Co., Chicago  
 Chicago Pneum. Tool Co., New York  
 Indiana Air Pump Co., Indianapolis  
 Ingersoll-Rand Co., N. Y.
- PUMPS, CENTRIFUGAL**  
 \*Aldrich Pump Co., Allentown, Pa.  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Cook Motor Co., Delaware, O.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*Keystone Driller Co., Beaver Falls, Pa.  
 \*Novo Engine Co., Lansing, Mich.  
 \*Allis-Chalmers Mfg. Co., Milwaukee  
 Amer. Well Works, Aurora, Ill.  
 Aurora Pump & Mfg. Co., Aurora, Ill.  
 Barnes Mfg. Co., Mansfield, O.  
 Bethlehem Steel Co., Bethlehem, Pa.  
 Buffalo Stm. Pump Co., Buffalo.  
 A. S. Cameron Stm. Pump Wks., N. Y.  
 Chicago Pump Co., Chicago  
 Dayton-Dowd Co., Quincy, Ill.  
 Dean Bros. Co., Indianapolis.  
 De Laval Stm. Turb. Co., Trenton, N. J.  
 Erie Pump & Eng. Wks., Medina, N. Y.  
 Evinrude Motor Co., Milwaukee.  
 Fairbanks, Morse & Co., Chicago  
 General Elec. Co., Schenectady.  
 Goulds Pumps, Inc., Seneca Falls, N. Y.  
 Indiana Aid Pump Co., Indianapolis  
 Ingersoll-Rand Co., New York  
 LeCourtney Co., Newark, N. J.  
 Manistee Iron Wks., Manistee, Mich.  
 Morris Mach. Wks., Baldwinville, N. Y.  
 Rumsey Pump Co., Seneca Falls, N. Y.  
 United Iron Wks., Inc., K. City, Mo.  
 Warren Stm. Pump Co., Warren, Mass.  
 Weinman Pump Mfg. Co., Columbus, O.  
 Wheeler Condenser & Eng. Co., Carstet, N. J.  
 Worthington Pump & Mch. Corp., N. Y.  
 Yeomans Bros. Co., Chicago
- PUMPS, CONTRACTORS'**  
 \*Aldrich Pump Co., Allentown, Pa.  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*John Lauson Mfg. Co., New Holstein, Wis.
- \*Kinney Mfg. Co., Boston  
 \*Novo Engine Co., Lansing, Mich.  
 Standard Scale & Supply Co., Pittsburgh  
 \*Waukesha Motor Co., Waukesha, Wis.  
 Allis-Chalmers Mfg. Co., Milwaukee  
 Amer. Well Wks., Aurora, Ill.  
 Aurora Pump & Mfg. Co., Aurora, Ill.  
 Barnes Mfg. Co., Mansfield, O.  
 Buda Co., Harvey, Ill.  
 A. S. Cameron Stm. Pump Wks., N. Y.  
 Ralph B. Carter Co., N. Y.  
 C. H. & E. Mfg. Co., Milwaukee  
 Construction Machy. Co., Waterloo, Ia.  
 Dayton-Dowd Co., Quincy, Ill.  
 Deming Co., Salem, O.  
 Emerson Pump & Valve Co., Alexandria, Va.  
 Erie Pump & Eng. Wks., Medina, N. Y.  
 Fairbanks, Morse & Co., Chicago  
 Goulds Pumps, Inc., Seneca Falls, N. Y.  
 Ingersoll-Rand Co., New York  
 Jaeger Portable Power Corp., Detroit  
 LeCourtney Co., Newark, N. J.  
 Morris Mach. Wks., Baldwinville, N. Y.  
 F. E. Myers & Bro. Co., Ashland, O.  
 Pulsomerton Steam Pump Co., N. Y.  
 Rumsey Pump Co., Seneca Falls, N. Y.  
 Van Noyhuys Mach. Wks., Albany, N. Y.  
 Waldo Bros. & Bond Co., Boston, Mass.
- PUMPS, DEEP WELL**  
 \*Aldrich Pump Co., Allentown, Pa.  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*Keystone Driller Co., Beaver Falls, Pa.  
 \*Novo Engine Co., Lansing, Mich.  
 Amer. Well Wks., Aurora, Ill.  
 Barnes Mfg. Co., Mansfield, O.  
 A. S. Cameron Stm. Pump Wks., N. Y.  
 A. D. Cook, Inc., Lawrenceburg, Ind.  
 Dean Bros. Co., Indianapolis.  
 Deming Co., Salem, O.  
 Goulds Pumps, Inc., Seneca Falls, N. Y.  
 Harris Air Pump Co., Indianapolis  
 Indiana Air Pump Co., Indianapolis  
 Ingersoll-Rand Co., New York  
 Layne & Bowler, Inc., Memphis, Tenn.  
 A. Y. McDonald Mfg. Co., Dubuque, Ia.  
 Midwest Eng. Co., Indianapolis, Ind.  
 F. E. Myers & Bro. Co., Ashland, O.  
 Rumsey Pump Co., Seneca Falls, N. Y.  
 United Iron Wks., Inc., K. City, Mo.  
 Weinman Pump Mfg. Co., Columbus, O.
- PUMPS, DIAPHRAGM**  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*Novo Engine Co., Lansing, Mich.  
 \*Witte Eng. Wks., Kansas City, Mo.  
 Aurora Pump & Mfg. Co., Aurora, Ill.  
 Barnes Mfg. Co., Mansfield, O.  
 Ralph B. Carter Co., N. Y.  
 C. H. & E. Mfg. Co., Milwaukee  
 Construction Machy. Co., Waterloo, Ia.  
 Deming Co., Salem, O.  
 Dorr Co., N. Y.  
 Goulds Pumps, Inc., Seneca Falls, N. Y.  
 Waldo Bros. & Bond Co., Boston, Mass.
- PUMPS, DREDGING**  
 \*Novo Engine Co., Lansing, Mich.  
 Elliott Mach. Corp., Baltimore, Md.  
 Erie Pump & Eng. Co., Medina, N. Y.  
 Ingersoll-Rand Co., New York  
 Morris Mach. Wks., Baldwinville, N. Y.
- PUMPS, GASOLINE AND OIL**  
 \*Kinney Mfg. Co., Boston  
 S. F. Bowser & Co., Inc., Ft. Wayne, Ind.  
 Gilbert & Barker Mfg. Co., Springfield, Mass.  
 Ingersoll-Rand Co., New York
- Tokheim Oil Tank & Pump Co., Ft. Wayne, Ind.  
 Wayne Tank & Pump Co., Ft. Wayne, Ind.
- PUMPS, PORTABLE**  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*John Lauson Mfg. Co., New Holstein, Wis.  
 Evinrude Motor Co., Milwaukee.  
 Jaeger Portable Power Corp., Detroit
- PUMPS, POWER**  
 \*Aldrich Pump Co., Allentown, Pa.  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Domestic Eng. & Pump Co., Shippensburg, Pa.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*Kinney Mfg. Co., Boston  
 \*Novo Eng. Co., Lansing, Mich.  
 \*Waukesha Motor Co., Waukesha, Wis.  
 Alamo Iron Wks., San Antonio, Tex.  
 Allis-Chalmers Mfg. Co., Milwaukee  
 Amer. Well Wks., Aurora, Ill.  
 Aurora Pump & Mfg. Co., Aurora, Ill.  
 Barnes Mfg. Co., Mansfield, O.  
 Chicago Pump Co., Chicago  
 Dayton-Dowd Co., Quincy, Ill.  
 De Laval Stm. Turb. Co., Trenton, N. J.  
 Deming Co., Salem, O.  
 Evinrude Motor Co., Milwaukee.  
 Fairbanks, Morse & Co., Chicago  
 Gardner Governor Co., Quincy, Ill.  
 Goulds Pumps, Inc., Seneca Falls, N. Y.  
 Indiana Air Pump Co., Indianapolis  
 Ingersoll-Rand Co., New York  
 Lawrence Mach. Co., Newark, N. J.  
 F. E. Myers & Bro. Co., Ashland, O.  
 Northern Fire App. Co., Minneapolis.  
 Rumsey Pump Co., Seneca Falls, N. Y.  
 Weinman Pump Mfg. Co., Columbus, O.  
 Worthington Pump & Mch. Corp., N. Y.  
 Yeomans Bros. Co., Chicago.
- PUMPS, SEWAGE**  
 \*American Steam Pump Co., Battle Creek, Mich.  
 \*Amer. Well Wks., Aurora, Ill.  
 \*Humphreys Mfg. Co., Mansfield, O.  
 \*Pacific Flush Tank Co., Chi. and N. Y.  
 Barnes Mfg. Co., Mansfield, O.  
 A. S. Cameron Stm. Pump Wks., N. Y.  
 Chicago Pump Co., Chicago.  
 Fairbanks, Morse & Co., Chicago.  
 Ingersoll-Rand Co., New York.  
 Sanitation Corp., N. Y.  
 Warren Stm. Pump Co., Warren, Mass.  
 White Co., Cleveland, O.  
 Yeomans Bros. Co., Chicago.
- PUMPS, TAR AND ASPHALT**  
 \*Barber Asphalt Co., Philadelphia.  
 \*Kinney Mfg. Co., Boston.
- RADIATORS FOR GASOLINE ENGINES**  
 McCord Radiator Mfg. Co., Detroit.  
 Modine Mfg. Co., Racine, Wis.  
 Racine Radiator Co., Racine, Wis.
- RAIL AND RAIL JOINTS**  
 Bethlehem Steel Co., Bethlehem, Pa.  
 Carnegie Steel Co., Pittsburgh, Pa.  
 Easton Car & Const. Co., Easton, Pa.  
 Koppel Ind. Car & Equip. Co., Koppel, Pa.  
 Sweet's Steel Co., Williamsport, Pa.
- RAILROAD DITCHERS (See Excavators, Ditch and Trench)**
- RECORDERS, WATER STAGE**  
 Bristol Co., Waterbury, Conn.  
 Builders Iron Fdry., Providence, R. I.  
 W. & L. E. Gurley, Troy, N. Y.
- REFRIGERATING MACHINERY (See Ice Making Machinery)**

If you find any errors or omissions in this Where to Purchase list, please send corrections to  
 CONTRACTORS AND ENGINEERS MONTHLY



# THE INSLEY EXCAVATOR

for SHOVEL - DITCHER - CRANE  
SKIMMER AND DRAGLINE WORK



## Finish that Job Now!

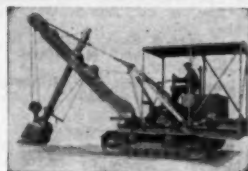
**W**HAT difference does it make if you do buy an Insley Excavator now instead of next spring, if it helps you finish the job this fall instead of holding it over until next year? It costs you no more to buy an Insley now than it will cost you six months from now, and if it puts you over the hump, it will have paid for itself.

No matter what sort of job you have, there are dozens of little details that the Insley will clean up for you which will enable you to get your money out of the job *now* instead of next May. It will build shoulders, dig drainage ditches, dig sidewalk, curb and gutter excavation, etc., and will replace a large slow-moving inefficient crew of hand laborers on each job.

**Buy that Insley Now!**

# INSLEY

MANUFACTURING  
COMPANY - Indianapolis



SHOVEL



CRANE



DRAGLINE

No. 543

**ENGINEERS  
AND  
MANUFACTURERS**

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

# Where to Purchase

## REINFORCING, CONCRETE (See Concrete Reinforcement)

### RIVETERS, PNEUMATIC

Alliance Machine Co., Alliance, O.  
Chicago Pneum. Tool Co., New York  
Cleveland Pneum. Tool Co., Cleveland, O.  
Hanna Eng. Works, Chicago  
Helwig Mfg. Co., St. Paul, Minn.  
Independent Pneum. Tool Co., Chicago  
Ingersoll-Rand Co., N. Y.  
Wm. H. Keller, Inc., Grand Haven, Mich.  
Shepherd Electric Crane & Hoist Co., Montour Falls, N. Y.  
Southwark Fdry. & Mach. Co., Phila.  
Watson-Stillman Co., N. Y.

### RIVET SETS

Chicago Pneum. Tool Co., New York  
Cleveland Pneum. Tool Co., Cleveland, O.  
Dunbar Drop Forge Co., Chicago  
Independent Pneum. Tool Co., Chicago  
Ingersoll-Rand Co., N. Y.

### ROAD GRADERS, HORSE OR TRACTOR DRAWN

\*Austin-West'n Rd. Mch. Co., Chicago.  
\*Baker Mfg. Co., Springfield, Ill.  
\*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
\*Good Rds. Mch. Co., Kennett Sq., Pa.  
\*Rome Mfg. Co., Rome, N. Y.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Gustav Schaefer Wagon Co., Oakland, Cal.  
\*Spears-Wells Mch. Co., Indianapolis, Ind.  
J. D. Adams & Co., Indianapolis, Ind.  
Beach Mfg. Co., Charlotte, Mich.  
C. D. Edwards Mfg. Co., Albert Lea, Minn.  
Gilbert Mfg. Co., Aberdeen, S. D.  
Killefer Mfg. Co., Los Angeles.  
Klauer Mfg. Co., Dubuque, Iowa.  
Little Red Wagon Mfg. Co., Omaha.  
Lytle Culv. & Rd. Equip. Co., Minneapolis.  
N. & Monroe & Sons, Arthur, Ill.  
Owensboro Ditcher & Grader Co., Owensboro, Ky.  
Stockland Rd. Mach. Co., Minneapolis.  
Western Wheelbarrow Co., Aurora, Ill.

### ROAD GRADERS, POWER

\*Acme Road Mach. Co., Frankfort, N. Y.  
\*Austin-West'n Rd. Mch. Co., Chicago.  
\*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
\*Good Rds. Mch. Co., Kennett Sq., Pa.  
\*W. A. Ridell Co., Bucyrus, O.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Spears-Wells Mch. Co., Oakland, Cal.  
Gilbert Mfg. Co., Aberdeen, S. D.  
Little Red Wagon Mfg. Co., Omaha.  
Shaw-Enoch Tractor Co., Minneapolis.  
Wehr Co., Milwaukee.

### ROAD MAINTAINERS, POWER

\*Spears-Wells Mch. Co., Oakland, Cal.

### ROAD OILS (See Oils, Road)

### ROAD OILERS

\*Austin-West'n Rd. Mch. Co., Chicago.  
\*Good Rds. Mch. Co., Kennett Sq., Pa.  
\*Kinney Mfg. Co., Boston.  
\*Mack Trucks, Inc., N. Y.  
\*Spears-Wells Mch. Co., Oakland, Cal.  
E. D. Etnyre & Co., Oregon, Ill.  
Municipal Sup. Co., So. Bend, Ind.  
White Co., Cleveland

### ROAD PLOW

\*Spears-Wells Mch. Co., Oakland, Cal.

### ROAD SCRAPERS

\*Acme Rd. Mach. Co., Frankfort, N. Y.  
\*Austin-West'n Rd. Mch. Co., Chicago  
\*Baker Mfg. Co., Springfield, Ill.  
\*Euclid Cr. & Hst. Co., Euclid Village, O.  
\*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
\*Good Rds. Mch. Co., Kennett Sq., Pa.

\*La. Plant-Chests Mfg. Co., Cedar Rapids, Ia

\*Miami Trailer-Scraper Co., Troy, O.  
\*Russell Grader Mfg. Co., Minneapolis  
\*Gustav Schaefer Wagon Co., Cleveland, O.  
J. D. Adams & Co., Indianapolis, Ind.  
Beach Mfg. Co., Charlotte, Mich.  
Davenport Mfg. Co., Los Angeles, Cal.  
Gilbert Mfg. Co., Aberdeen, S. D.  
Killefer Mfg. Co., Los Angeles.  
Roderick Lean Co., Mansfield, O.  
Little Red Wagon Mfg. Co., Omaha.  
Lytle Culv. & Rd. Equip. Co., Minneapolis.  
Miskin Scraper Works, Ucon, Ida.  
Root Spring Scraper Co., Kalamazoo  
Shaw-Enoch Tractor Co., Minneapolis  
Sidney Steel Scraper Co., Sidney, O.  
Stockland Rd. Mch. Co., Minneapolis.  
Western Wheelbarrow Co., Aurora, Ill.

### ROAD AND PAVING MACHINERY

\*Acme Rd. Mach. Co., Frankfort, N. Y.  
\*Austin-West'n Rd. Mch. Co., Chicago  
\*Baker Mfg. Co., Springfield, Ill.  
\*Barber Asphalt Co., Phila., Pa.  
\*Blaw-Knox Co., Pittsburgh, Pa.  
\*Buffalo-Springfield Roller Co., Springfield, O.  
\*Caterpillar Tractor Co., San Leandro, Cal. and Peoria, Ill.  
\*Conner & Co., Inc., Phila., Pa.  
\*Cleveland Tractor Co., Cleveland, O.  
\*Euclid Cr. & Hst. Co., Euclid Village, O.  
\*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
\*Good Rds. Mach. Co., Kennett Sq., Pa.  
\*Geo. Halsis Mfg. Co., N. Y.  
\*Hetzl Steel Form & Ir. Co., Warren, O.  
\*Jos. Honhorst Co., Cincinnati, O.  
\*Kinney Mfg. Co., Boston.  
\*Koeberling Co., Milwaukee.  
\*Lakewood Eng. Co., Cleveland, O.  
\*Littleford Bros., Cincinnati, O.  
\*Mack Trucks, Inc., N. Y.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Gustav Schaefer Wagon Co., Cleveland.  
\*T. L. Smith Co., Milwaukee.  
\*Spears-Wells Mch. Co., Oakland, Cal.  
J. D. Adams & Co., Indianapolis, Ind.  
Beach Mfg. Co., Charlotte, Mich.  
Chausse Oil Burner Co., Elkhart, Ind.  
F. D. Cummer & Son Co., Cleveland, O.  
Easton Car & Const. Co., Easton, Pa.  
C. D. Edwards Mfg. Co., Albert Lea, Minn.  
Equitable Asph. Maint. Co., Kans. C. Mo.  
Eric Mach. Shops, Erie, Pa.  
J. D. Farsey Mfg. Co., Cleveland, O.  
Gilbert Mfg. Co., Aberdeen, S. D.  
Little Red Wagon Mfg. Co., Omaha.  
Shaw-Enoch Tractor Co., Minneapolis.  
Slusser McLean Scraper Co., Sidney, O.  
Universal Rd. Mch. Co., Kingston, N. Y.

### ROAD AND PAVING ROLLERS

\*Acme Road Mach. Co., Frankfort, N. Y.  
\*Austin-West'n Rd. Mch. Co., Chicago  
\*Barber Asphalt Co., Phila., Pa.  
\*Buffalo-Springfield Roller Co., Springfield, O.  
\*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
\*Good Rds. Mach. Co., Kennett Sq., Pa.  
\*Huber Mfg. Co., Marion, O.  
\*Kinney Standards, Inc., Brooklyn, N. Y.  
\*Austin Mfg. Co., Chicago.  
Beach Mfg. Co., Charlotte, Mich.  
J. I. Case Threshing Mach. Co., Racine, Wis.  
Eric Mach. Shops, Erie, Pa.  
Horst & Stricker Co., Davenport, Ia.  
Wehr Co., Milwaukee.

### ROCK CRUSHERS AND FULVERIZERS (See Crushers)

### ROCK DRILLS (See Drills, Rock)

### ROLLERS, LAWN, TRACTOR POWER

\*Kinney Standards, Inc., Brooklyn, N. Y.

## ROOFING, ASPHALT, ASPHALT, COMPOSITION, TILE, ETC.

\*Barber Asphalt Co., Phila., Pa.  
\*Barrett Co., N. Y.  
\*Phillip Carey Co., Cincinnati, O.  
\*Standard Oil Co. (Indiana), Chicago.  
Amer. Cem. Tile Mfg. Co., Pittsburgh.  
Atlantic Ref. & Asph. Corp., Phila., Pa.  
Beaver Prod. Co., Inc., Buffalo, N. Y.  
Bird & Son, Inc., E. Walpole, Mass.  
Certain-teed Products Corp., N. Y.  
Chatfield Mfg. Co., Cincinnati, O.  
Edwards Mfg. Co., Cincinnati, O.  
Euclid Chemical Co., Cleveland  
Flintkote Co., Boston  
Johns-Manville, Inc., N. Y.  
Keystone Roofing Mfg. Co., York, Pa.  
The Lehigh Co., Chicago.  
J. Lewis Mfg. Co., Chicago.  
Nat'l Roofing Co., Tonawanda, N. Y.  
Nat'l Sheet Metal Roofing Co., Jersey City, N. J.  
Ruberoid Co., N. Y.  
Sall Mountain Co., Chicago.  
Sifo Prod. Co., St. Paul, Minn.  
L. Sonneborn & Sons, Inc., N. Y.  
Texas Co., N. Y.  
Western Elastite Roofing Co., Denver.

### ROOFING, METAL

\*Blaw-Knox Co., Pittsburgh, Pa.  
\*Truscon Steel Co., Youngstown, O.  
Amer. Rolling Mill Co., Middletown, O.  
Amer. Sheet & Tin Plate Co., Pitts'h.  
Central Alloy Stl. Corp., Massillon, O.  
Edwards Mfg. Co., Cincinnati, O.  
Klauer Mfg. Co., Dubuque, Ia.  
Milwaukee Corr. Co., Milwaukee.  
Republic Ir. & Stl. Co., Youngstown, O.  
Youngstown Sheet & Tube Co., Youngstown, O.

### ROOFING KETTLES (See Kettles)

### ROUTERS

\*Ted Carr & Co., Chicago.  
Lakewood Eng. Co., Cleveland.

### ROPE, MANILA

Amer. Mfg. Co., B'klyn, N. Y.  
Columbian Rope Co., Auburn, N. Y.  
Cupples Cordage Co., B'klyn, N. Y.  
Hooven & Allison Co., Xenia, O.  
R. A. Kelly Co., Xenia, O.  
N. Bedford Cordage Co., N. Bedford, Mass.  
Peoria Cordage Co., Peoria, Ill.  
Plymouth Cordage Co., N. Plymouth, Mass.  
Portland Cordage Co., Portland, Ore.  
Tubbs Cordage Co., San Francisco.  
Wall Rope Wks., N. Y.  
Waterbury Co., N. Y.  
Whitlock Cordage Co., N. Y.

### ROPE, WIRE, HOISTING, HAULAGE

\*American Steel & Wire Co., Chicago  
\*W'msport Wire Rope Co., W'msport, Pa.  
Amer. Cable Co., Inc., N. Y.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Fischer & Hayes Rope & Steel Co., Chicago.  
Hazard Wire Rope Co., Wilkesbarre, Pa.  
A. Leschen & Sons Rope Co., St. Louis.  
Macwhyrte Co., Kenosha, Wis.  
J. A. Rumbly's Sons Co., Trenton, N. J.  
Upson-Walton Co., Cleveland, O.  
Waterbury Co., N. Y.  
Wickwire Spencer Steel Co., N. Y.

### RUBBER TIRES (See Tires)

### RULES

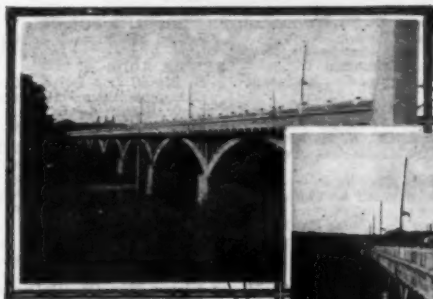
\*Lufkin Rule Co., Saginaw, Mich.

### SALAMANDERS

\*Aeroll Burner Co., West New York, N.J.  
\*General Wheelbarrow Co., Cleveland, O.  
\*Jos. Honhorst Co., Cincinnati, O.  
\*Littleford Brothers, Cincinnati, O.  
Hauk Mfg. Co., B'klyn, N. Y.  
Jackson Mfg. Co., Harrisburg.

### SAFETY TREADS (See Treads, Safety)

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*



8" deLavaud cast iron line at Colorado River Bridge, Austin, Texas.



## deLavaud Centrifugal Cast Iron Pipe with Anthony Joints makes a *permanently tight line*

SUCH installations as illustrated here are subject to unusual strains and constant vibration. The great tensile strength of deLavaud Pipe and the flexibility of the Anthony Joint eliminate the possibility of these strains, causing leakage.

Municipal, industrial or construction engineers should write for literature covering specifications, manufacture and use of deLavaud pipe for high pressure mains.



## United States Cast Iron Pipe and Foundry Company

### SALES OFFICES

Philadelphia: 1421 Chestnut St.  
Chicago: 122 So. Michigan Blvd.  
Birmingham: 1st Ave. & 20th St.  
Buffalo: 957 East Ferry Street  
Cleveland: 1150 E. 26th Street  
Minneapolis: 8th St. & Hennepin Ave.  
New York: 71 Broadway  
San Francisco: 3rd & Market Sts.  
Pittsburgh: 6th & Smithfield Sts.  
Dallas: Akard & Commerce Sts.  
Kansas City: 13th & Locust Sts.

General Offices:  
**Burlington, New Jersey**

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

# Where to Purchase

**SASH, ROLLER STEEL** (See Window Frames and Sash)

## SAW HORSES

\*Everhot Mfg. Co., Maywood, Ill.

## SAW RIGS, PORTABLE

\*Amer. Saw Mill Mach. Co., Hackettstown, N. J.  
\*Witte Eng. Wks., Kansas City, Mo.  
Beach Mfg. Co., Montrose, Pa.  
O. H. & E. Mfg. Co., Milwaukee.  
Knickerbocker Co., Jackson, Mich.  
Leach Co., Oshkosh, Wis.  
Jones Superior Mach. Co., Chicago.

## SAWS, HAND, POWER

\*Witte Eng. Wks., Kansas City, Mo.  
Electro-Magnetic Tool Co., Chicago.  
Flexway Corp., Cincinnati, O.  
Ingersoll-Rand Co., New York.  
Michel Elec. Hand Saw Co., Chicago.  
Porter Cable Mach. Co., Syracuse.  
F. L. Rogers & Co., Chicago.  
Wappat Gear Wks., Pittsburgh, Pa.

## SCALFERS

\*Acme Rd. Mach. Co., Frankfort, N. Y.  
\*Austin-West's Rd. Mch. Co., Chicago  
\*Barber Asphalt Co., Phila., Pa.  
\*Buffalo-Springfield Roller Co., Springfield, O.  
\*Gallion Ir. Wks. & Mfg. Co., Gallion, O.  
\*Good Rds. Mach. Co., Kennett Sq., Pa.  
\*Huber Mfg. Co., Marion, O.  
\*Rome Mfg. Co., Rome, N. Y.  
\*Russell Grader Mfg. Co., Minneapolis.  
Austin Mfg. Co., Chicago.  
C.D. Edwards Mfg. Co., Albert Lea, Minn.  
Klauer Mfg. Co., Dubuque, Iowa.  
Universal Rd. Mch. Co., Kingston, N.Y.

## SCALFERS, TEETH FOR

\*Gallion Ir. Wks. & Mfg. Co., Gallion, O.  
\*Russell Grader Mfg. Co., Minneapolis.  
Shunk Mfg. Co., Bucyrus, O.

## SCOOPS, SKIMMER & TRENCH

\*Bay City Dr. Wks., Bay City, Mich.  
\*Keystone Driller Co., Beaver Falls, Pa.

## SCRAPERS, DRAGLINE

\*Erie Steam Shovel Co., Erie, Pa.  
\*Link-Belt Co., Chicago.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Sauerman Bros., Chicago.  
Austin Mfg. Co., Chicago.  
Beach Mfg. Co., Charlotte, Mich.

## SCRAPERS, POWER DRAG

\*Erie Steam Shovel Co., Erie, Pa.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Sauerman Bros., Chicago.  
Austin Mfg. Co., Chicago.

## SCRAPERS, ROAD (See Road Scrapers)

**SCRAPERS, SELF-LOADING**  
\*Baker Mfg. Co., Springfield, Ill.  
\*Euclid Cr. & Hst. Co., Euclid Village, O.  
\*Miami Trailer-Scraper Co., Troy, O.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Gustav Schaefer Wagon Co., Cleveland.  
Davenport Mfg. Co., Los Angeles, Cal.  
Perry Co., Sidney, Ohio.  
Roderick Lean Co., Mansfield, O.  
Shaw-Enoch Tractor Co., Minneapolis.

## SCREENS, SAND, GRAVEL AND COAL

\*Acme Road Machy. Co., Frankfort, N. Y.  
\*Atlas Eng. Co., Milwaukee, Wis.  
\*Austin-Western Rd. Mch. Co., Chicago.  
\*Chain Belt Co., Milwaukee, Wis.  
\*Chicago Automatic Conv. Co., Chicago.  
\*Gallion Ir. Wks. & Mfg. Co., Gallion, O.  
\*Good Rds. Mch. Co., Kennett Sq., Pa.  
\*Haine Mfg. Co., N. Y.  
\*Link-Belt Co., Chicago.  
\*Littleford Bros., Cincinnati, O.  
\*Russell Grader Mfg. Co., Minneapolis.  
\*Smith Eng. Wks., Milwaukee  
Allie-Chalmers Mfg. Co., Milwaukee.  
Austin Mfg. Co., Chicago.  
O. O. Bartlett & Snow Co., Cleveland, O.  
Beach Mfg. Co., Charlotte, Mich.  
Brown Hstg. Machy. Co., Cleveland, O.

Deister Concentrator Co., Ft. Wayne, Ind.  
Gifford-Wood Co., Hudson, N. Y.  
Hendrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
Lyle Culv. & Rd. Equip. Co., Minneapolis, Minn.

Morrow Mfg. Co., Wellston, O.  
Newaygo Eng. Co., Newaygo, Mich.  
New Holland Mch. Co., N. Holland, Pa.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Robins Conv. Belt Co., N. Y.  
H. B. Sackett Screen & Chute Co., Chicago.  
Universal Crusher Co., Cedar Rapids, Ia.  
Universal Rd. Mach. Co., Kingston, N.Y.  
Webster Mfg. Co., Chicago.  
Weller Mfg. Co., Chicago.  
Wickwire Spencer Steel Co., N. Y.

## SCREENS, SEWAGE

\*Link-Belt Co., Philadelphia.  
Dorr Co., New York.  
Green Bay Fdry. & Mach. Wks., Green Bay, Wis.  
Sanitation Corp'n., N. Y.  
Simplex Ejector Co., Chicago.

## SEWAGE DISINFECTION

\*Wallace & Tiernan Co., Inc., Newark, N. J.

## SEWAGE DISPOSAL APPARATUS

\*Link-Belt Co., Chicago.  
\*Pacific Flush Tank Co., Chicago & N. Y.  
Dorr Co., N. Y.  
Sanitation Corp'n., N. Y.  
Simplex Ejector Co., Chicago.

## SEWAGE EJECTORS

\*Pacific Flush Tank Co., Chicago & N. Y.  
Sanitation Corp., N. Y.  
Simplex Ejector Co., Chicago.  
Yeomans Bros. Co., Chicago.

## SEWAGE PUMPS (See Pumps)

## SEWER BLOCKS, SEGMENT

American Vit. Products Co., Akron, O.  
Cannelton Sewer Pipe Co., Cannelton, Ind.  
Denver Sewer Pipe & Clay Co., Denver, Col.  
W. S. Dickey Clay Mfg. Co., Kansas City, Mo.  
Evans & Howard Fire Brick Co., St. Louis, Mo.  
Laclede Christy Clay Prod. Co., St. Louis, Mo.  
Macomb Sewer Pipe Wks., Macomb, Ill.  
Pacific Clay Prod. Co., L. Angeles, Cal.  
Red Wing Sewer Pipe Co., Red Wing, Minn.  
Robinson Clay Prod. Co., Akron, O.  
Standard Fire Brick & Sewer Pipe Co., Pueblo, Col.

## SEWER BRACES

\*Templeton, Kenly & Co., Chicago

## SEWER CLEANING APPARATUS

Atia Corp., New York.  
F. Bissell Co., Toledo, O.  
Champion Corp., Hammond, Ind.  
Self Propelling Nozzle Co., N. Y.  
Turbine Sewer Mach. Co., Milwaukee.

## SEWER PIPE AND DRAIN TILE

American Vit. Prod. Co., Akron, O.  
Blackmer & Post Pipe Co., St. Louis.  
Wm. E. Dea Co., Chicago.  
Denver Sewer Pipe & Clay Co., Denver, Col.  
W. S. Dickey Clay Mfg. Co., K. City, Mo.  
Evans & Howard Fire Brick Co., St. Louis.  
Logan Clay Prod. Co., Logan, O.  
Ohio Vit. Pipe Co., Uhrichsville, O.  
Patton Clay Mfg. Co., Patton, Pa.  
Red Wing Sewer Pipe Co., Red Wing, Minn.  
Robinson Clay Prod. Co., Akron, O.  
Streator Clay Mfg. Co., Streator, Ill.

## SEWER PIPE FORMS

\*Hetzlall Stl. Form & Ir. Co., Warren, O.

## SEWER RODS

F. Bissell Co., Toledo, O.  
Champion Corp., Hammond, Ind.  
Luck Sewer Equip. Co., Chicago.  
Turbine Sewer Mach. Co., Milwaukee.

## SHARPENERS, DRILL STEEL

\*Gardner-Denver Co., Denver, Col.  
\*Hardsoc Wonder Dr. Co., Ottumwa, Ia.  
\*Sullivan Machy Co., Chicago  
Ingersoll-Rand Co., New York

## SHINGLES, METAL

Aluminum Co. of Am., Pittsburgh, Pa.  
Berger Mfg. Co., Canton, O.  
Edwards Mfg. Co., Cincinnati, O.  
Klauer Mfg. Co., Dubuque, Ia.  
Milwaukee Corrugating Co., Milwaukee.  
Nat'l Sheet Metal Roofing Co., Jersey City, N. J.  
Newport Rolling Mill Co., Newport, Ky.  
Penn Metal Co., Boston.  
Tiffin Art Metal Co., Tiffin, O.  
\*Wheeling Metal Mfg. Co., Wheeling, W. Va.

## SEWER PIPE JOINT COMPOUNDS

\*Pacific Flush Tank Co., Chicago & N. Y.  
G. K. Sales Agency, Macungie, Pa.  
Ruberoil Co., N. Y.  
Servicised Prod. Corp., Chicago  
Conc. Form Co., Inc., Syracuse, N. Y.  
Quinn Wire & Iron Wks., Boone, Ia.  
Kaber & Lang Mfg. Co., Kendallville, Ind.

## SHOES

Concrete Eng. Co., Omaha, Neb.  
Dayton Sure Grip & Shore Co., Dayton, O.  
M. & M. Form Clamp Co., Minneapolis  
The O. D. G. Co., Owensboro, Ky.  
H. W. Ross Co., Cincinnati, O.  
Ross-Meyer-Recht Co., Cincinnati, O.  
Symons Clamp & Mfg. Co., Chicago.  
Universal Form Clamp Co., Chicago.

## SHOVELS, CRAWLING TRACTOR

\*Erie Steam Shovel Co., Erie, Pa.  
\*Speeder Mch. Corp., Cedar Rapids, Ia.  
\*Thew Shovel Co., Lorain, Ohio  
Amer. Hst. & Derrick Co., St. Paul.

## SHOVELS, ELECTRIC

\*Bay City Dredge Wks., Bay City, Mich.  
\*Koehring Co., Milwaukee, Wis.  
\*Link-Belt Co., Chicago.  
\*Speeder Machy. Corp., Cedar Rapids, Ia.  
\*Thew Shovel Co., Lorain, O.  
Amer. Hst. & Derrick Co., St. Paul.  
Bucyrus Co., So. Milwaukee, Wis.  
Byers Mach. Co., Ravenna, O.  
Industrial Wks., Bay City, Mich.  
Marion Steam Shovel Co., Marion, O.  
Osgood Co., Marion, O.

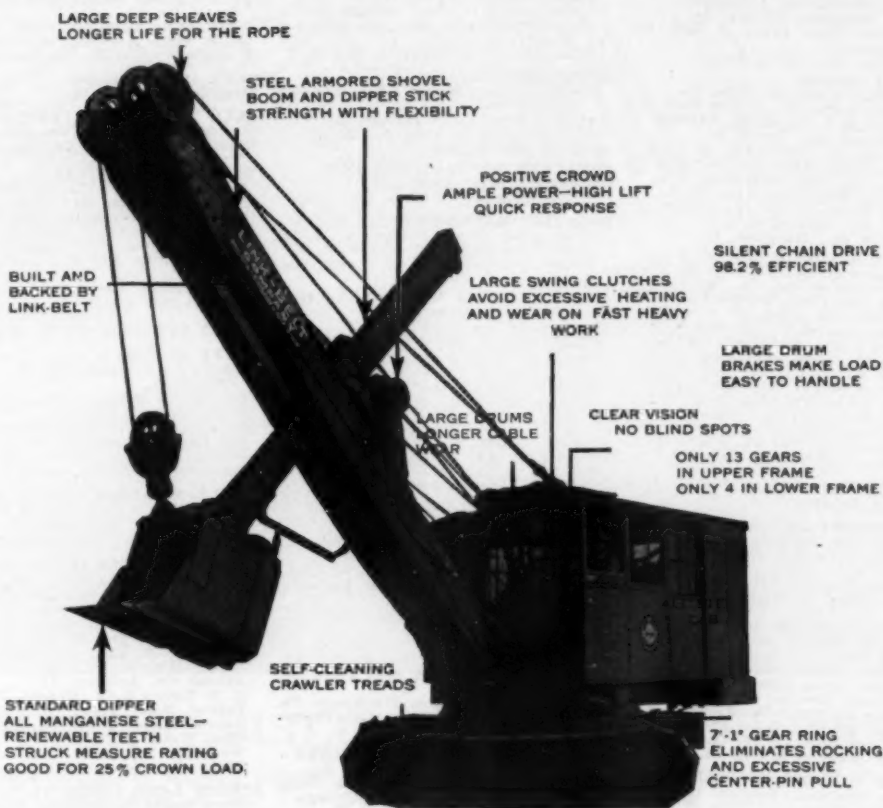
## SHOVELS, GASOLINE

\*Bay City Dredge Wks., Bay City, Mich.  
\*Erie Steam Shovel Co., Erie, Pa.  
\*General Excavator Co., Marion, O.  
\*Inley Mfg. Co., Indianapolis.  
\*Keystone Driller Co., Beaver Falls, Pa.  
\*Koehring Co., Milwaukee, Wis.  
\*Link-Belt Co., Chicago.  
\*Mead-Morrison Mfg. Co., Boston  
\*Orton Crane & Shovel Co., Chicago.  
\*Speeder Machy. Corp., Cedar Rapids, Ia.  
\*Star Drilling Machine Co., Akron, O.  
\*Thew Shovel Co., Lorain, O.  
\*Universal Power Shovel Co., Detroit.  
Amer. Hst. & Derrick Co., St. Paul.  
Austin Steel Dredge Co., Ft. Wayne, Ind.  
Austin Mach. Corp., Muskegon, Mich.  
Brown Hstg. Machy. Co., Cleveland, O.  
Bucyrus Co., So. Milwaukee, Wis.  
Byers Mach. Co., Ravenna, O.  
Harnischfeger Corp., Milwaukee, Wis.  
Industrial Wks., Bay City, Mich.  
Marion Steam Shovel Co., Marion, O.  
McMyler Interstate Co., Cleveland, O.  
Osgood Co., Marion, O.

If you find any errors or omissions in this Where to Purchase list, please send corrections to  
CONTRACTORS AND ENGINEERS MONTHLY



# 14 Points of Merit



**I**NTO our line of Link-Belt Shovels we have put all the experience and skill of our designers; employed all of the superior manufacturing facilities of our modern shops. They are the best shovels we know how to build. These are the reasons why their performance has earned such nation wide acceptance by those who handle materials. Send for Catalog No. 895.

## LINK-BELT COMPANY

8153A

Leading manufacturers of Elevating, Conveying, and Power Transmission Machinery  
CHICAGO, 300 W. Pershing Road

Offices in Principal Cities

# LINK-BELT SHOVEL

VISIT OUR BOOTH AT THE ROAD SHOW—CLEVELAND, OHIO—JAN. 9-13, 1928

When writing to advertisers please mention the CONTRACTOR AND ENGINEERS MONTHLY—Thank You.

# Where to Purchase

**SHOVELS, GASOLINE (FORDSON)**  
 \*Insley Mfg. Co., Indianapolis, Ind.  
 \*Universal Power Shovel Co., Detroit.  
 Anthony Co., Streator, Ill.  
 Hughes-Keenan Co., Cleveland.  
 Mandt Company, Keokuk, Ia.  
 Milwaukee Elec. Crane & Mfg. Co., Milwaukee.  
 Squier-Kix Co., Milwaukee.

**SHOVELS, STEAM**  
 \*Erie Steam Shovel Co., Erie, Pa.  
 \*Keystone Driller Co., Beaver Falls, Pa.  
 \*Orion Crane & Shovel Co., Chicago.  
 \*Thew Shovel Co., Lorain, O.  
 Amer. Est. & Derrick Co., St. Paul.  
 Bellwood Stm. Shovel Co., Bellwood, Pa.  
 Bucyrus Co., So. Milwaukee, Wis.  
 Industrial Wks., Bay City, Mich.  
 Marion Steam Shovel Co., Marion, O.  
 Osgood Co., Marion, O.  
 Russell & Co., Massillon, O.

**SHOVELS, SPADES & SCOOPS**  
 American Mfg. Co., Chattanooga, Tenn.  
 Ames Shovel & Tool Co., Boston.  
 Baldwin Tool Wks., Parkersburg, W. Va.  
 Beall Bros. Co., Alton, Ill.  
 Connaut Shovel Co., Connaut, O.  
 Hubbard & Co., Pittsburgh, Pa.  
 Indiana Shovel Co., New Castle, Ind.  
 Jackson Shovel Co., Montpelier, Pa.  
 Pittsburgh Shovel Co., Pittsburgh, Pa.  
 Russell Shovel Co., Aliquippa, Pa.  
 Stevens-Webb Co., Inc., Altoona, Pa.  
 Union Furnace Mfg. Co., Altoona, Pa.  
 Wood Shovel & Tool Co., Piqua, O.  
 Wyoming Shovel Wks., Wyoming, Pa.

**SIDEWALK AND ROAD FORMS (See Forms, Concrete)**

**SIGNS, STREET AND ROAD**  
 Alameda Sign & Signal Co., Chicago.  
 Auto Sign Display Co. of Mo., St. Louis, Mo.  
 Baltimore Enam. & Nov. Co., Baltimore.  
 Elkhart Fdry. & Mach. Co., Elkhart, Ind.  
 Evern-Century Sign Co., Boston.  
 Ingram-Richardson Mfg. Co., Beaver Falls, Pa.  
 Lyle Signs, Minneapolis, Minn.  
 Municipal Street Sign Co., N. Y.  
 Ohio Traffic Devices Co., Columbus.  
 Rochester St. Signal Co., Rochester, N.Y.  
 Standard Mfg. Co., Cedar Falls, Ia.  
 Union Iron Prod. Co., E. Chicago, Ind.  
 Western Stamping & Mfg. Co., St. Paul.

**SLEEVES, TAPPING AND VALVE**  
 Mueller Company, Decatur, Ill.  
 Rensselaer Valve Co., Troy, N. Y.  
 A. P. Smith Mfg. Co., East Orange, N.J.

**SLUICE GATES (See Gates, Sluice)**

**SMOKE STACKS (See Stacks, Steel)**

**SNOW REMOVAL MACHINERY**  
 \*Austin-Western Rd. Mch. Co., Chicago.  
 \*Baker Mfg. Co., Springfield, Ill.  
 \*Barber-Groene Co., Aurora, Ill.  
 \*Caterpillar Tractor Co., San Leandro, Calif. and Peoria, Ill.  
 \*Cleveland Tractor Co., Cleveland, O.  
 \*Good Rds. Mach. Co., Kennett Sq., Pa.  
 \*La Plant-Cheate Mfg. Co., Cedar Rapids, Ia.  
 \*Mack Trucks, Inc., N. Y.  
 \*Mead-Morrison Mfg. Co., E. Boston.  
 \*Monarch Tractors Corp., Springfield, Ill.  
 \*Russell Grader Mfg. Co., Minneapolis.  
 Austin Mfg. Co., Chicago.  
 Byers Mach. Co., Ravenna, O.  
 C. D. Edwards Mfg. Co., Albert Lea, Minn.  
 Fox Rotary Snow Broom Co., N. Y.  
 Geo. Halas Mfg. Co., N. Y.  
 Hiway Service Corp., Wausau, Wis.  
 Killefer Mfg. Co., Los Angeles, Cal.  
 Klauer Mfg. Co., Dubuque, Iowa.  
 Linn Mfg. Co., Morris, N. Y.

Owensboro Ditcher & Grader Co., Owensboro, Ky.  
 Rotary Snow Plow Co., Minneapolis.  
 Shaw-Enochs Tractor Co., Minneapolis.  
 W. M. Toy Co., Sidney, O.  
 Union-Iron Wks., Inc., Bangor, Me.  
 Walsh Holyoke St. Bldg. Wks., Holyoke, Mass.  
 Walter Snow Fighters, L. I. City, N. Y.

**SNOW FENCING**  
 \*Good Roads Mach. Co., Kennett Square, Pa.  
 Cyclone Fence Co., Waukegan, Ill.  
 Wickwire-Spencer Steel Co., N. Y.

**SPADES (See Shovels)**

**SPRAYERS, ASPHALT AND TAR**  
 \*Littleford Bros., Cincinnati.  
 Kinney Mfg. Co., Boston.

**SPRAYING MACHINERY FOR TREES**  
 Bean Spray Pump Co., Lansing, Mich.  
 Field Force Pump Co., Elmira, N. Y.  
 Fitzhenry-Gupill Co., E. Cambridge, Mass.

**SPRAY PAINTING MACHINERY (See Painting Machinery)**

**SPREADERS, STONE**  
 \*Austin-Western Rd. Mch. Co., Chicago.  
 \*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
 Burch Corp'n., Crestline, O.  
 Shaw-Enochs Tractor Co., Minneapolis.  
 Universal Road Machy. Co., Kingston, N. Y.

**STACKS, STEEL**  
 \*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Connery & Co., Inc., Philadelphia.  
 \*Heli Co., Milwaukee, Wis.  
 \*Holtzel St. Form & Ir. Co., Warren, O.  
 \*Jos. Honhorst Co., Cincinnati, O.  
 \*Littleford Bros., Cincinnati, O.  
 Birmingham Tank Co., Birmingham, Ala.  
 Canton Art Metal Co., Canton, O.  
 Chatita Boiler & Tank Co., Chatita, Tenn.  
 Chicago Bridge & Iron Wks., Chicago.  
 Graver Corp., Chicago.  
 N. Y. Central Iron Wks. Co., Inc., Hagerstown, Md.  
 Tippet & Wood, Phillipsburg, Pa.  
 Petroleum Iron Wks. Co., Sharon, Pa.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
 W. B. Seale & Sons, Pittsburgh, Pa.  
 Walsh & Weldner Boiler Co., Chatita-noga, Tenn.

**STANDPIES & ELEVATED TANKS**  
 W. E. Caldwell Co., Louisville, Ky.  
 Chatita Bldg. & Tank Co., Chatita, Tenn.  
 Chicago Bridge & Iron Wks., Chicago.  
 R. D. Cole Mfg. Co., Newnan, Ga.  
 Lancaster Iron Wks., Lancaster, Pa.  
 Pacific Tank & Pipe Co., San Francisco.  
 Petroleum Ir. Wks. Co., Sharon, Pa.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
 Tippet & Wood, Phillipsburg, Pa.  
 United Iron Wks., Inc., E. City, Mo.  
 Walsh & Weldner Boiler Co., Chatita-noga, Tenn.

**STEAM SHOVELS (See Shovels, Steam)**

**STEAM TURBINES (See Turbines)**

**STEEL PLATE CONSTRUCTION**  
 \*Blaw-Knox Co., Pittsburgh, Pa.  
 \*Connery & Co., Philadelphia.  
 \*Heli Co., Milwaukee, Wis.  
 \*Holtzel St. Form & Ir. Co., Warren, O.  
 \*Jos. Honhorst Co., Cincinnati, O.  
 \*Littleford Bros., Cincinnati, O.  
 \*Union Iron Wks., Inc., Hoboken, N. J.  
 Bethlehem Steel Co., Bethlehem, Pa.  
 Birge Boiler Wks., Akron, O.  
 Birmingham Tank Co., Birmingham, Ala.  
 Chatita Boiler & Tank Co., Chatita, Tenn.  
 Chicago Bridge & Iron Wks., Chicago.  
 Graver Corp., E. Chicago, Ind.  
 Hendrick Mfg. Co., Carbondale, Pa.  
 McClintic-Marshall Co., Pittsburgh, Pa.

N. Y. Central Iron Wks. Co., Inc., Hagerstown, Md.  
 Penna. Bridge Co., Beaver Falls, Ia.  
 Petroleum Iron Wks. Co., Sharon, Pa.  
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
 Ritter-Conley Co., Pittsburgh, Pa.  
 W. B. Seale & Sons, Pittsburgh, Pa.  
 Walsh & Weldner Bldg. Co., Chatita, Tenn.

**STEEL SHEET PILING**  
 \*Wemlinger, Inc., N. Y.

**STEEL TOWERS, CONCRETE**  
 \*Insley Mfg. Co., Indianapolis, Ind.  
 \*Ransome Conc. Mch. Co., Dunellen, N.J.

**STOKERS, MECHANICAL**  
 Automatic Furnace Co., Dayton, O.  
 Babcock & Wilcox Co., N. Y.  
 Combustion Engineering Corp., N. Y.  
 Detroit Stoker Co., Detroit.  
 Green Eng. Co., E. Chicago, Ind.  
 Sanford Riley Stoker Co., Worcester, Mass.  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**STREET AND ROAD SIGNS (See Signs)**

**STREET BROOMS**  
 Ind. Brush & Broom Mfg. Co., Indianapolis, Ind.  
 Kendallville Broom & Brush Co., Kendallville, Ind.  
 Lang Broom Co., Pittsburgh, Pa.  
 Jos. Lay Co., Portland, Ind.  
 Osborn Mfg. Co., Cleveland, O.  
 Standard Brh. & Brm. Mfg. Co., Ch'go.

**STREET CLEANERS' CARTS**  
 Durlach Can & Iron Wks., B'ham, N.Y.  
 Rochester Can Co., Rochester, N. Y.  
 Tarrant Mfg. Co., Saratoga Springs, N.Y.

**STREET FLUSHERS AND SPRINKLERS**  
 \*Austin-Western Rd. Mch. Co., Chicago.  
 \*Gallen Ir. Wks. & Mfg. Co., Gallen, O.  
 \*Heli Co., Milwaukee, Wis.  
 \*Kinney Mfg. Co., Boston.  
 \*Mack Trucks, Inc., N. Y.  
 \*Whitehead & Kales Co., Detroit.  
 Austin Mfg. Co., Chicago.  
 Autocar Co., Ardmore, Pa.  
 E. D. Etnyre & Co., Oregon, Ill.  
 Federal Motor Truck Co., Detroit.  
 General Motors Truck Co., Chicago.  
 Chas. Hvas & Co., N. Y.  
 Municipal Supply Co., So. Bend, Ind.  
 White Co., Cleveland, O.

**STREET LAMP POSTS**  
 \*Novo Engine Co., Lansing, Mich.  
 Amer. Conc. Prod. Co., Forest Park, Ill.  
 Chicago Conc. Post Co., Chicago.  
 J. B. Clew & Sons, Chicago.  
 Electric Ry. Equip. Co., Cincinnati, O.  
 King Mfg. Co., Chicago.  
 Logan Co., Louisville, Ky.  
 J. L. Mott Iron Wks., New York.  
 J. S. Schofield's Sons Co., Macon, Ga.  
 Union Metal Mfg. Co., Canton, O.  
 Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**STREET SIGNS (See Signs, Street)**

**STREET SWEEPERS**  
 \*Austin-Western Rd. Mch. Co., Chicago.  
 \*Kinney Mfg. Co., Boston.  
 \*Whitehead & Kales Co., Detroit.  
 Austin Mfg. Co., Chicago.  
 Butler Mfg. Co., Cleveland, O.  
 Elgin Sales Corp., N. Y.

**STREET SWEEPER BROOMS**  
 Kendallville Broom & Brush Co., Kendallville, Ind.  
 Lang Broom Co., Pittsburgh, Pa.  
 Jos. Lay Co., Portland, Ind.  
 Osborn Mfg. Co., Cleveland, O.  
 Standard Brh. & Brm. Mfg. Co., Ch'go.

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*



## MAKING BUILDING CODES UNIFORM



It sounds impossible. Perhaps it is. Yet continued efforts are being made to bring about this highly desirable standardization—and it's more than a dream in the field of steel construction. The A. I. S. C. Standard Specification is already being used in more than one hundred cities in the United States and Canada. This specification is estimated to be saving owners and other taxpayers more than \$30,000,000 a year!

The Institute's Code of Standard Practice is clearing up all misunderstandings between buyers and sellers of structural steel. A Department of Architectural Relations and a competent engineering staff are aiding in the solution of technical steel construction problems everywhere. Our educational publicity marks the first concerted effort to tell the public all the facts about steel construction. Send for full information and your copy of the valuable fact-book, "STEEL NEVER FAILS."

### AMERICAN INSTITUTE OF STEEL CONSTRUCTION, Inc.

*The cooperative non-profit service organization of the structural steel industry of the United States and Canada. Correspondence is invited. 285 Madison Ave., New York City*

**STEEL INSURES STRENGTH AND SECURITY**

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

# Where to Purchase

## STUMP PULLERS

- \*Ersted Machy. Mfg. Co., Portland, O.
- \*La Plant-Chicago Mfg. Co., Cedar Rapids, Ia.
- H. L. Bennett & Co., Westerville, O.
- John Waldron Corp., New Brunswick, N. J.

## SUBGRADING MACHINES

- \*Koebring Co., Milwaukee.
- \*Lakewood Eng. Co., Cleveland, O.
- The Hug Co., Highland, Ill.
- Shaw-Knochs Tractor Co., Minneapolis.

## SUPERHEATERS

- Habcock & Wilcox Co., N. Y.
- Power Specialty Co., N. Y.
- Superheater Co., N. Y.

## SURVEYORS' INSTRUMENTS (See Instruments)

## SWITCHBOARDS

- Allis-Chalmers Mfg. Co., Milwaukee.
- General Elec. Co., Schenectady, N. Y.
- Wagner Elec. Mfg. Co., St. Louis, Mo.
- Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

## TAMPING MACHINES

- \*Cement Block Mch. Co., Newark, N.J.
- Abrams Cement Tool Co., Detroit.
- Chicago Pneum. Tool Co., N. Y.
- Harnischfeger Corp., Milwaukee, Wis.
- Independent Pa. Tool Co., Chicago.
- Ingersoll-Rand Co., N. Y.

## TANKS, AIR COMPRESSOR

- \*Connery & Co., Inc., Philadelphia.
- \*Hull Co., Milwaukee, Wis.
- \*Littleford Bros., Cincinnati, O.
- Biggs Boiler Wks., Akron, O.
- Birmingham Tank Co., Birmingham, Ala.
- Chicago Bridge & Iron Wks., Chicago.
- Chicago Pneum. Tool Co., N. Y.
- Curtis Pa. Mch. Co., St. Louis, Mo.
- Graver Corp., E. Chicago, Ind.
- Indiana Air Pump Co., Indianapolis.
- Ingersoll-Rand Co., N. Y.
- Lancaster Iron Wks., Lancaster, Pa.
- Nagle Eng. & Boiler Wks., Erie, Pa.
- National Tube Co., Pittsburgh, Pa.
- Petroleum Iron Wks. Co., Sharon, Pa.
- Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
- W. B. Seafie & Sons, Pittsburgh, Pa.
- Westinghouse Tract. Brake Co., Wilmerding, Pa.
- Worthington Pump & Mch. Corp., N.Y.

## TANKS, STEEL

- \*Connery & Co., Philadelphia.
- \*Hull Co., Milwaukee, Wis.
- \*Jos. Honhorst Co., Cincinnati, O.
- \*Littleford Bros., Cincinnati, O.
- Bausman Mfg. Co., Millersville, Pa.
- Biggs Boiler Wks., Akron, O.
- Birmingham Tank Co., Birmingham, Ala.
- F. B. Bowser & Co., Inc., Ft. Wayne, Ind.
- J. I. Case Threshing Mach. Co., Racine, Wis.
- W. R. Caldwell Co., Louisville, Ky.
- Canton Art Metal Co., Canton, O.
- Chatt. Boiler & Tank Co., Chattanooga, Tenn.
- Chicago Bridge & Iron Wks., Chicago.
- Columbian St. Tank Co., K. City, Mo.
- Dover Boiler Wks., N. Y.
- Farrell Mfg. Co., Joliet, Ill.
- C. C. Fouts Co., Middletown, O.
- Graver Corp., E. Chicago, Ind.
- H. Hardesty Mfg. Co., Denver, Col.
- Hendrick Mfg. Co., Carbondale, Pa.
- Lancaster Iron Wks., Lancaster, Pa.
- Nagle Eng. & Boiler Wks., Erie, Pa.
- N. Y. Central Iron Wks. Co., Hagers-town, Md.
- Pacific Tank & Pipe Co., San Francisco.
- Petroleum Iron Wks. Co., Sharon, Pa.
- Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

- Ritter-Conley Co., Pittsburgh, Pa.
- W. B. Seafie & Sons, Pittsburgh.
- United Iron Wks., Inc., K. City, Mo.
- Walsh & Weidner Boiler Co., Chattanooga, Tenn.

## TANKS, WOOD

- W. R. Caldwell Co., Louisville, Ky.
- G. M. Davis & Son, Palatka, Fla.
- Eagle Tank Co., Chicago.
- Hauser-Stander Tank Co., Cincinnati, O.
- Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
- Nat'l Tank & Pipe Co., Portland, Ore.
- Pacific Tank & Pipe Co., San Francisco.
- Redwood Mfrs. Co., San Francisco.
- A. T. Stearns Lumber Co., Boston.
- U. S. Wind Eng. & Pump Co., Batavia, Ill.
- Wendnagel & Co., Chicago.

## TANK WAGONS

- \*Acme Ed. Mach. Co., Frankfort, N. Y.
- \*Gallion Jr. Wks. & Mfg. Co., Gallion, O.
- \*Hell Co., Milwaukee, Wis.
- \*Jos. Honhorst Co., Cincinnati, O.
- \*Mack Trucks, Inc., N. Y.
- Butler Mfg. Co., Minneapolis, Minn.
- J. I. Case Threshing Mach. Co., Racine.

## TAPES, STEEL AND METALLIC

- \*Luffkin Rule Co., Saginaw, Mich.
- Eugene Dietgen Co., N. Y.
- Kneffel & Esser Co., Hoboken, N. J.
- The L. S. Starrett Co., Athol, Mass.

## TAR

- \*Barrett Co., N. Y.
- Amer. Tar Prod. Co., Pittsburgh, Pa.

## TARPAULINS WATERPROOF

- \*Hoesler Tarpaulin & Canvas Goods Co., Indianapolis, Ind.

## TAR KETTLES (See Kettles)

## TRAWLING OUTFITS

- \*Asroll Burner Co., West New York, N.J.
- \*Littleford Bros., Cincinnati.
- Hauk Mfg. Co., Bklyn., N. Y.

## TIE TAMPERS

- Electric Tamber & Equip. Co., Chicago.

## TIE BOLTS FOR WALL FORMS

- \*Hawley Mfg. Co., Chicago, Ill.
- M. & M. Wire Clamp Co., Minneapolis.

## TIES, STEEL

- Carnegie Steel Co., Pittsburgh, Pa.
- Int'l. Steel Tie Co., Cleveland, O.
- Koppel Ind. Car & Equip. Co., Koppel, Pa.
- Sweet's Steel Co., Williamsport, Pa.

## TIMBER CLAMPS

- M. & M. Wire Clamp Co., Minneapolis.
- Fyle-Rogers Corp., N. Y.

## TIRES, RUBBER (For Motor Trucks)

- Firestone Tire & Rubber Co., Akron, O.
- Fisk Tire Co., Chicopee Falls, Mass.
- Goodrich Rubber Co., Akron, O.
- Goodyear Tire & Rubber Co., Akron, O.
- Kelly Springfield Tire Co., N. Y.
- U. S. Tire Co., N. Y.

## TOOL HOUSES, PORTABLE STEEL

- \*Blaw-Knox Co., Pittsburgh, Pa.
- \*Littleford Bros., Cincinnati, O.

## TORCHES, OIL (HEATING)

- \*Littleford Bros., Cincinnati.
- \*Mead-Morrison Mfg. Co., E. Boston.
- \*Alex. Milburn Co., Baltimore, Md.
- Chausse Oil Burner Co., Elkhart, Ind.
- Hauk Mfg. Co., Bklyn., N. Y.
- Bewall Paint Wks., Ft. Wayne, Ind.
- Sherwin-Williams Co., K. City, Mo.
- Tropical Paint & Oil Co., Cleveland, O.
- Truscon Laboratories, Detroit, Mich.

## TOWERS (See Standpipes and Elevated Tanks)

## TRACKS, INDUSTRIAL AND PORTABLE

- \*Lakewood Eng. Co., Cleveland, O.
- Atlas Car & Mfg. Co., Cleveland, O.
- Bethlehem Steel Co., Bethlehem, Pa.
- Chase Fdry. & Mfg. Co., Columbus, O.
- Easton Car & Const. Co., Easton, Pa.
- C. W. Hunt Co., Inc., W.N. Brighton, N.Y.
- Koppel Ind. Car & Equip. Co., Koppel, Pa.
- Sweet's Steel Co., Williamsport, Pa.

## TRACTION TREADS (See Treads, Traction)

## TRACTORS

- \*Caterpillar Tractor Co., San Leandro, Calif.
- \*Cleveland Tractor Co., Cleveland, O.
- \*Geo. Hais Mfg. Co., New York.
- \*Huber Mfg. Co., Marion, O.
- \*J. T. Tractor Co., Cleveland, O.
- \*John Lauson Co., New Holstein, Wis.
- \*Mack Trucks, Inc., N. Y.
- \*Mead-Morrison Mfg. Co., E. Boston.
- \*Monarch Tractors Corp., Springfield, Ill.
- Advance-Ramely Thresher Co., Laporte, Ind.
- Allis-Chalmers Mfg. Co., Milwaukee.
- Bates Mfg. Co., Joliet, Ill.
- J. I. Case Threshing Co., Racine, Wis.
- Clark Tractor Co., Battle Creek, Mich.
- Electric Wheel Co., Quincy, Ill.
- Emerson-Brantingham, Rockford, Ill.
- Ford Motor Co., Detroit, Mich.
- Hart-Parr Co., Charles City, Ia.
- Int'l. Harvester Co., Chicago.
- Kinnard & Haines, Minneapolis, Minn.
- Lombard Tractor & Truck Corp., N. Y.
- Minneapolis Steel & Mach. Co., Minneapolis.
- Rogers Bros. Corp., Albion, Pa.
- Shaw-Knochs Tractor Co., Minneapolis, Wis.
- Wehr Co., Milwaukee.

## TRACTOR ACCESSORIES

- \*Trail-It Co., St. Paul, Minn.
- \*Whitehead & Kales Co., Detroit.
- Pickering Governor Co., Portland, Conn.

## TRACTOR HITCHES

- \*Trail-It Co., St. Paul, Minn.
- Whitehead & Kales Co., Detroit.

## TRAFFIC LINE MARKERS

- Carrara Paint Co., Cleveland.
- Continental Prod. Co., Euclid, O.
- Line-O-Graph Co., N. Y.
- Tenn. Tool Wks. Inc., Knoxville, Tenn.

## TRAFFIC PAINT

- J. E. Bauer Co., Los Angeles, Cal.
- Continental Prod. Co., Euclid, O.
- Hanline Bros., Baltimore, Md.

## TRAFFIC PLATES

- Allan Wood Jr. & St. Co., Phila.
- Amer. Pressed Steel Co., Phila.
- Central Ir. & St. Co., Harrisburg, Pa.

## TRAFFIC SIGNAL EQUIPMENT

- Acme Traffic Signal Co., Los Angeles.
- Alumoyd Sign & Signal Co., Chicago.
- Amer. Gas Accumulator Co., Elizabeth, N. J.
- Auto Sign Display Co. of Mo., St. Louis, Mo.
- Cretney Traffic Guide Co., Madison, Wis.
- Crouse-Hinds Co., Syracuse, N. Y.
- Esco Mfg. Co., Peoria, Ill.
- Everett-Century Sign Co., Boston.
- Griewold Safety Signal Co., Minneapolis.
- Harrington-Seaberg Corp., Moline, Ill.
- Hornl Signal Mfg. Corp., Newark, N.J.
- Line Material Co., St. Milwaukee, Wis.
- Little Giant Co., Mankato, Minn.
- Lytle-Signa, Minneapolis, Minn.

If you find any errors or omissions in this Where to Purchase list, please send corrections to  
CONTRACTORS AND ENGINEERS MONTHLY





## A Pace Maker in Industry

Throughout the years of change and expansion of the internal combustion engine, Continental has been a pace maker in its development.

The progress of industry has been matched by the continual improvements in Red Seal Continental Motors until today their leadership is based upon accomplishments under the severest conditions in widely varying fields. And users can be certain that Continental performance will measure up to the most rigid requirements of gasoline power for specific needs in industry.



Galion Six Cylinder Tandem  
Roller powered with Red Seal  
Continental Industrial Motor

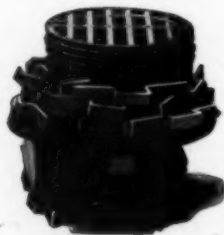
CONTINENTAL MOTORS CORPORATION  
INDUSTRIAL EQUIPMENT DIVISION  
Office and Factory: Muskegon, Michigan  
The Largest Exclusive Motor Manufacturer in the World

# Continental Motors

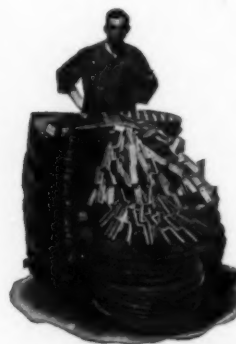
Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# Old General Salamander

## Reports for Duty Again



*A dozen General Salamanders knocked down*



*100 General Salamanders knocked down, occupy a space 3½ feet square and 3½ feet high*

ONCE more the cold weather season is with us, and once more boots and coats and tarpaulins and salamanders,—the old standbys,—are called out of retirement to help fight the winter.

Ready—assemble—fire—that's General Salamanders, kept on hand knocked down until needed, and ready for use in a minute.

—and ready now for shipment! "General" furnishes them in two sizes, 14-in. and 17-in. with or without lids and ash-pans. Reasonable in price.

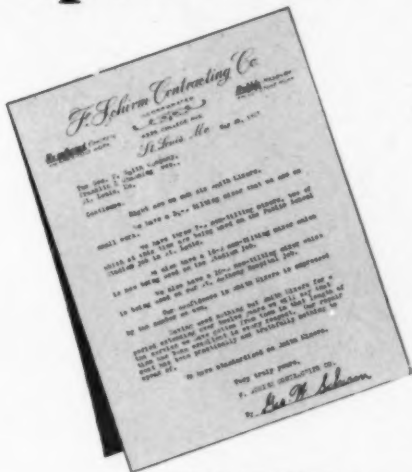
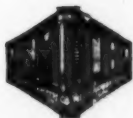
See your distributor. Order in some of them now.

"General" also makes concrete carts, all-steel mortar boxes, and a full line of contractors' barrows.



**GENERAL WHEELBARROW COMPANY**  
Formerly THE AKRON BARROW COMPANY  
3140 East 65th Street - - Cleveland, Ohio

# Over 12 years' repair costs have been "nothing to speak of!"



SMITH MIXERS, in any size from 2½-S to 112-S, are built with a toughness at points of wear that means freedom from breakdowns on rush jobs and a long life on which to figure low depreciation costs.

*We'd like to send you Catalog 526*

**THE T. L. SMITH COMPANY**

1030 32nd St.

MILWAUKEE, WIS.

*Sales Offices and Service Stations in all Principal Cities*

*Smith 14-S Non-Tilting Mixer being used by F. Schirm Contracting Co. at St. Louis, on the Public High School Stadium job*

# SMITH MIXERS

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

## "We Like the Service"

C. A. Moses Construction Co.

When the quality of Sterling wheelbarrows which have always proven satisfactory, we like the service which goes with your product. We find that we can secure your equipment and repairs quickly within the wide range of cities in which we operate.

Yours very truly  
C. A. MOSES CONSTRUCTION COMPANY

*J. D. Miller*

The C. A. Moses Construction Co. are national builders, and they, like many other large operators, must have complete and prompt service. The wide distribution of our product and the interchangeability of Sterling parts make it possible to standardize this important equipment to advantage.

Let shown represent only one of many improvements incorporated in Sterling construction.

Stocked by  
Hardware  
and Equip-  
ment Dealers  
Everywhere

ACCEPT  
NO  
SUBSTITUTE

# STERLING WHEELBARRROW COMPANY

Milwaukee

MANUFACTURED FOR THE EUROPEAN MARKETS BY  
STERLING FOUNDRY SPECIALISTES LTD. STERLING WORKS, BEDFORD, ENGLAND

Wisconsin

Sterling Warehouses—Chicago, New York, Philadelphia, Cleveland, Detroit, St. Louis

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.



# HELTZEL 35, 55, 80 and 110 Ton Trailer Bins

## Special Bins, All Kinds and Capacities

### Measuring or Weighing Agrabatchers

HELTZEL 35 and 55 Ton Trailer Bins are shipped, trailed and erected in one piece. HELTZEL 80 and 110 Ton Bins come in two sections. By far the strongest and easiest handled bins ever designed.

Note the quick and simple erecting of the bin in the illustration at the lower right.

Just trail 'em to the job and stand 'em up with your crane in minutes where other types take days.

*Write for HELTZEL Bin and Agrabatcher Bulletin*

**VISIT OUR BOOTH AT THE ROAD SHOW, CLEVELAND, OHIO, JAN. 9-13, 1928**



Five HELTZEL Standard Bins, 35 tons capacity, with clamshell gate (2 not shown)



HELTZEL 55-Ton Trailer Bin on Florida work, M. C. Winterburn, Inc.



Three HELTZEL Circular Bins and one Trailer Bin (all 35-ton) with clamshell gates. Fairlawn Supply & Coal Company, Fairlawn, Ohio



All ready for erection of HELTZEL Bin. Just start the crane and up it goes into position.

**THE HELTZEL STEEL FORM & IRON CO., WARREN, OHIO**

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

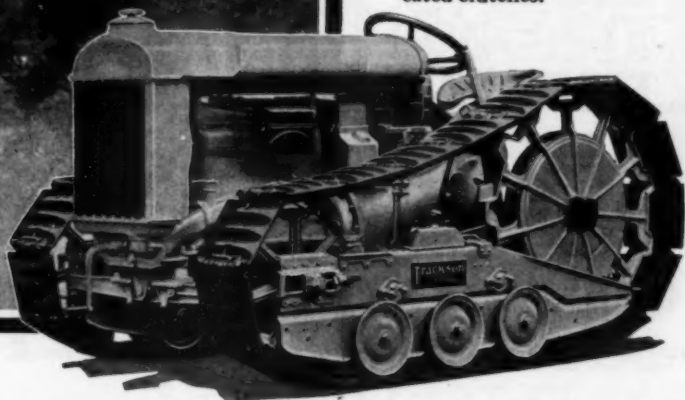
# Where to Purchase

- Ohio Traffic Devices Co., Columbus, O.  
Rochester St. Signal Co., Rochester, N.Y.  
Tolheim Oil Tank & Pump Co., Ft. Wayne, Ind.  
Union Iron Prod. Co., E. Chicago, Ind.  
Universal Traffic Control Co., Oklahoma City, Okla.  
Welsbach Traffic Signal Co., Phila.
- TRAILERS FOR TRUCKS AND TRACTORS**  
\*Eagle Wagon Wks., Auburn, N. Y.  
\*Highway Trailer Co., Edgerton, Wis.  
\*La Plant-Chaste Mfg. Co., Cedar Rapids, Ia.  
\*Miami Trailer-Scraper Co., Troy, O.  
\*Gustav Schaefer Wagon Co., Cleveland.  
\*Whitehead & Kales Co., Detroit, Mich.  
Arcadia Trailer Corp., Newark, N. Y.  
Detroit Trailer & Mach. Co., Detroit.  
Easton Car & Const. Co., Easton, Pa.  
Electric Wheel Co., Quincy, Ill.  
Fruehauf-Trailer Co., Detroit, Mich.  
Hercules Trailer Mfg. Co., Los Angeles.  
Imperial Mach. Co., Minneapolis.  
Lee Trailer & Body Co., Chicago.  
Little Red Wagon Mfg. Co., Omaha.  
Rex-Watson Corp., Cassiots, N. Y.  
Rogers Bros. Corp., Albion, Pa.  
Trail-Ford Co., Ann Arbor, Mich.  
Trailmobile Co., Cincinnati.  
Troy Trailer & Wagon Co., Troy, O.  
Warner Mfg. Co., Beloit, Wis.
- TRAILERS, HEAVY MACHINERY**  
\*Highway Trailer Co., Edgerton, Wis.  
\*Rogers Bros. Corp., Albion, Pa.
- TRAILERS, INDUSTRIAL**  
\*Highway Trailer Co., Edgerton, Wis.  
\*Lakewood Eng. Co., Cleveland, O.  
\*La Plant-Chaste Mfg. Co., Cedar Rapids, Ia.  
\*Miami Trailer-Scraper Co., Troy, O.  
\*Rogers Bros. Corp., Albion, Pa.  
\*Gustav Schaefer Wagon Co., Cleveland.  
\*Whitehead & Kales Co., Detroit, Mich.  
Chase Fry, & Mfg. Co., Columbus, O.  
Clark Tractor Co., Battle Creek, Mich.  
Detroit Trailer & Mach. Co., Detroit.  
Easton Car & Const. Co., Easton, Pa.  
Electric Wheel Co., Quincy, Ill.  
Lee Trailer & Body Co., Plymouth, Ind.  
Trailmobile Co., Cincinnati.
- TRAILER COUPLINGS**  
\*Trail-It Co., St. Paul, Minn.
- TRAMWAYS, AERIAL WIRE ROPE**  
(See Aerial Wire Rope Tramways)
- TRANSFORMERS**  
Allis-Chalmers Mfg. Co., Milwaukee.  
Duncan Elec. Mfg. Co., Lafayette, Ind.  
Enterprise Elec. Co., Warren, O.  
General Elec. Co., Schenectady, N. Y.  
Kuhlman Elec. Co., Bay City, Mich.  
Maloney Elec. Co., St. Louis, Mo.  
Packard Elec. Co., Warren, O.  
Pittsburgh Transf. Co., Pittsburgh, Pa.  
Wagner Elec. Corp., St. Louis, Mo.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
- TRANSITS AND LEVELS** (See Instruments)
- TRANSMISSIONS (Auxiliary & Replacement)**  
\*Fuller & Sons Mfg. Co., Kalamazoo, Mich.  
\*Waukesha Motor Co., Waukesha, Wis.  
Hinkley Motors, Inc., Detroit.  
Lincoln Mfg. Co., Connersville, Ind.  
Muncie Gear Wks., Muncie, Ind.  
Buckstell Sales & Mfg. Co., N. Y.  
Warford Corp., N. Y.
- TRANSMISSIONS FOR TRUCK MOTORS** (1 to 7 Tons)  
\*Fuller & Sons Mfg. Co., Kalamazoo, Mich.
- TRANSMISSION MACHINERY, POWER**  
\*Chain Belt Co., Milwaukee, Wis.  
\*Link-Belt Co., Chicago.  
Allis-Chalmers Mfg. Co., Milwaukee.  
Dodge Mfg. Corp., Mishawaka, Ind.
- Kent Mach. Co., Kent, O.  
Webster Mfg. Co., Chicago.  
Weller Mfg. Co., Chicago.
- TRASH CANS** (See Cans)
- TRAVELING WATER SCREENS**  
\*Chain Belt Co., Milwaukee.
- TREADS, SAFETY**  
Amer. Abrasive Metals Co., N. Y.  
Amer. Mason Safety Tread Co., Lowell, Mass.  
Concrete Steel Co., N. Y.  
Norton Co., Worcester, Mass.
- TREADS, TRACTION**  
\*Caterpillar Tractor Co., San Leandro, Cal.  
\*Trackson Co., Milwaukee.  
\*Whitehead & Kales Co., Detroit.  
Belle City Mfg. Co., Racine, Wis.  
Electric Wheel Co., Quincy, Ill.  
Tractor Grip Wheel Co., Toledo, O.
- TRENCH EXCAVATOR** (See Excavators)
- TRENCH PUMPS** (See Pumps, Contractors')
- TURBINES**  
Allis-Chalmers Mfg. Co., Milwaukee.  
De Laval Steam Turbine Co., Trenton, N. J.  
General Elec. Co., Schenectady, N. Y.  
Ingersoll-Rand Co., N. Y.  
Terry Steam Turb. Co., Hartford, Ct.  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
- TURNTABLES FOR MOTOR TRUCKS**  
\*Blaw-Knox Co., Pittsburgh, Pa.  
Champion Eng. Co., Easton, O.  
Easton Car & Const. Co., Easton, Pa.  
Freeman Mfg. Co., Racine, Wis.  
Hug Co., Highland, Ill.  
Western Structural Co., Moline, Ill.
- VALVES, ACID RESISTING**  
\*Barber Asphalt Co., Philadelphia.
- VALVES, CHECK**  
Chapman Valve Mfg. Co., Indian Orchard, Mass.  
Coffin Valve Co., Boston.  
Ludlow Valve Mfg. Co., Troy, N. Y.  
Mich. Valve & Fdry. Co., Detroit.  
Rensselaer Valve Co., Troy, N. Y.
- VALVES, GATE AND INDICATOR POSTS**  
Chapman Valve Mfg. Co., Indian Orchard, Mass.  
Coffin Valve Co., Boston.  
Columbian Ir. Wks., Chattanooga, Tenn.  
Crane Company, Chicago.  
Darling Valve & Mfg. Co., Williamsport, Pa.  
Eddy Valve Co., Waterford, N. Y.  
Fairbanks Co., N. Y.  
Iowa Valve Co., Oskaloosa, Ia.  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
Ludlow Valve Mfg. Co., Troy, N. Y.  
Rensselaer Valve Co., Troy, N. Y.  
A. P. Smith Mfg. Co., E. Orange, N. J.  
Watrous Co., St. Paul.  
R. D. Wood & Co., Philadelphia.
- VALVES, PRESSURE SEATED**  
Cleveland Pneum. Tool Co., Cleveland, Ohio.
- VALVES, RELIEF**  
\*Neptune Meter Co., New York.
- VALVES, TAPPING**  
Eddy Valve Co., Waterford, N. Y.  
Hays Mfg. Co., Erie, Pa.  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
Ludlow Valve Co., Troy, N. Y.  
Michigan Valve & Fdry. Co., Detroit.  
Rensselaer Valve Co., Troy, N. Y.  
Watrous Co., St. Paul.  
A. P. Smith Mfg. Co., E. Orange, N. J.
- VALVE BOXES AND HOUSINGS**  
\*Central Fdry. Co., N. Y.  
Chapman Valve Mfg. Co., Indian Orchard, Mass.  
H. W. Clark Co., Mattoon, Ill.  
J. B. Clow & Sons, Chicago.  
Columbian Ir. Wks., Chattanooga, Tenn.
- Darling Valve & Mfg. Co., W'msport, Pa.  
Eddy Valve Co., Waterford, N. Y.  
Iowa Valve Co., Oskaloosa, Ia.  
Kennedy Valve Mfg. Co., Elmira, N. Y.  
Ludlow Valve Mfg. Co., Troy, N. Y.  
Mueller Co., Decatur, Ill.  
Rensselaer Valve Co., Troy, N. Y.  
A. P. Smith Mfg. Co., E. Orange, N. J.  
Watrous Co., St. Paul.  
R. D. Wood & Co., Philadelphia.
- WAGONS** (See Dump Carts and Wagons)
- WAGON BODIES** (See Dump Bodies)
- WAGON LOADERS** (See Loaders, Gravel)
- WALLBOARD**  
Beaver Prod. Co., Inc., Buffalo, N. Y.  
Bird & Son, Inc., E. Walpole, Mass.  
Celotex Co., Chicago.  
Cornell Wood Prod. Co., Chicago.  
Haverhill Box Board Co., Haverhill, Mass.  
MacAndrews & Forbes Co., N. Y.  
Plastergon Wall Board Co., Buffalo, N. Y.  
U. S. Gypsum Co., Chicago.  
Uponox Co., Lockport, N. Y.  
Waldorf Paper Prod. Co., St. Paul, Minn.
- WALL TIES**  
\*Hawley Mfg. Co., Minneapolis.  
Berger Mfg. Co., Canton, O.  
Concrete Steel Co., N. Y.  
Consolidated Exp. Metal Co., Wheeling, W. Va.  
M. & M. Wire Clamp Co., Minneapolis.  
Milwaukee Corr. Co., Milwaukee, Wis.  
Niagara Metal Stamp Corp., Niagara Falls, N. Y.
- WASHERS, SAND AND GRAVEL**  
\*Link-Belt Co., Chicago.  
\*Smith Engineering Works, Milwaukee.  
Allis-Chalmers Mfg. Co., Milwaukee.  
Jeffrey Mfg. Co., Columbus, O.  
Stephens-Adamson Mfg. Co., Aurora, Ill.
- WATER MAIN CLEANING**  
Nat'l. Water Main Cleaning Co., N. Y.
- WATER MAIN TAPPING MACHINES**  
Hays Mfg. Co., Erie, Pa.  
Mueller Co., Decatur, Ill.  
A. P. Smith Mfg. Co., E. Orange, N. J.
- WATER METERS** (See Meters, Water)
- WATERPROOFING COMPOUNDS AND MATERIAL**  
\*Barber Asphalt Co., Philadelphia.  
\*Barrett Company, N. Y.  
\*Phillip Carey Co., Cincinnati, O.  
\*Standard Oil Co. (Indiana), Chicago.  
Anti-Hydro Waterproofing Co., Newark, N. J.  
Atlantic Refining & Asphalt Corp., Phila.  
Enclid Chemical Co., Cleveland.  
Genfire Steel Co., Youngstown, O.  
Master Builders' Co., Cleveland, O.  
Minwax Co., N. Y.  
Ruberoid Co., N. Y.  
Sandusky Cement Co., Cleveland, O.  
Sonneborn Sons, Inc., N. Y.  
Texas Company, N. Y.  
Toch Brothers, N. Y.  
Truscon Laboratories, Detroit, Mich.
- WATER PURIFICATION** (See also Filters)  
\*Wallace & Tiernan Co., Inc., Newark, N. J.  
Cochrane Corp., Philadelphia.  
Paradon Eng. Co., Arlington, N. J.  
R. U. V. Co., N. Y.
- WATER PURIFICATION CHEMICALS**  
Arnold Hoffman & Co., Inc., N. Y.  
E. I. Du Pont de Nemours & Co., Wilmington, Del.  
Electro Bleaching Gas Co., N. Y.  
General Chemical Co., N. Y.  
Hooker Electrochemical Co., N. Y.  
Mathieson Alkali Works, Inc., N. Y.  
Penna. Salt Mfg. Co., Philadelphia.
- WATER SOFTENERS**  
Amer. Water Softener Co., Philadelphia.

\* Indicates that the manufacturer carries an advertisement. See index facing inside back cover.\*



No other crawler has a combination of all these advantages; all-steel construction—no cast iron parts; fewest working parts—lowest upkeep cost; patented non-clogging track of specially hardened alloy steel; greater track area—better traction—less ground pressure; oil reservoir type dirt-proof bearings; simple steering — no complicated clutches.



## Cutting Labor and Construction Costs with Dependable Equipment

**C**UTTING labor and construction costs with modern, dependable equipment is the only way to cut bids and still leave a generous margin of profit. That is just what contractors everywhere have found their Trackson-Fordson equipment doing—cutting costs to the low dollar and doing the work in less time!

Trackson-Fordson with its sure-footed traction, great power and speed range, will work steadily, hour after hour, day after day regardless of ground and weather conditions on every contracting job—excavating,

loading, hauling, grading, leveling, ditching, back filling, fresno work, etc. It works perfectly with every kind of contracting equipment and often one man alone can easily operate both the Trackson and its equipment.

Its adaptability to every job, the speed with which it works, its low first cost and low operating cost explains why Trackson is adding to the profit of contracting work.

Send today for special free bulletin on contracting and dirt moving.

**Trackson Company**  
MAKERS OF FULL-CRAWLERS  
819 CLINTON ST. MILWAUKEE, WIS.

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

## Where to Purchase

Cochrane Corp., Philadelphia  
Graver Corp., E. Chicago, Ind.  
Int'l. Filter Co., Chicago  
Farmut Co., N. Y.  
W. B. Seafie & Sons, Pittsburgh, Pa.  
Wayne Tank & Pump Co., Ft. Wayne, Ind.

**WATER WASTE DETECTION**  
Empire Elec. & Water Co., Inc., N. Y.  
Pitometer Co., N. Y.  
Simplex Valve & Meter Co., Phil'a.

**WATER WHEELS**  
Allis-Chalmers Mfg. Co., Milwaukee  
Wm. Cramp & Sons Ship & Eng. Bldg. Co., (I. P. Morris Dept.) Phil'a.  
J. Leffel & Co., Springfield, O.  
Newport News Shipbldg. & Dry Dock Co., Newport News, Va.  
Pelton Water Wheel Co., San Francisco  
S. Morgan Smith Co., York, Pa.  
Worthington Pump & Mch. Corp., N.Y.

**WATER WORKS PUMPS (See Pumps)**

**WELDING APPARATUS**  
\*Alex. Milburn Co., Baltimore, Md.  
Burke Elec. Co., Erie, Pa.  
Carbic Mfg. Co., Duluth, Minn.  
General Elec. Co., Schenectady, N. Y.  
Lincoln Elec. Co., Cleveland, O.  
Macleod Co., Cincinnati, O.  
Oxweld Acetylene Co., L. I. City, N. Y.  
Smith's Inventions, Inc., Minneapolis, Minn.  
U. S. Light & Heat Corp., Niagara Falls  
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

**WELLS, CONCRETE**  
Kelly Well Co., Grand Island, Neb.

**WELLS, GRAVEL WALL**  
Layne & Bowler, Inc., Memphis, Tenn.

**WELL-DRILLING AND BLAST HOLE MACHINES**

\*Burkhardt Co., Kiel, Wis.  
\*Keystone Driller Co., Beaver Falls, Pa.  
\*Star Drilling Mach. Co., Akron, O.  
Armstrong Mfg. Co., Waterloo, Ia.  
Loomis Mach. Co., Tiffin, O.  
Sanderson Cyclone Drill Co., Orrville, O.

**WELL SCREENS**  
A. D. Cook, Inc., Lawrenceburg, Ind.  
E. E. Johnson, Inc., St. Paul, Minn.

**WHEELBARROWS**  
\*General Wheelbarrow Co., Cleveland, O.  
\*Sterling Wheelbarrow Co., Milwaukee  
\*Toledo Wheelbarrow Co., Toledo, O.  
Asheboro Wheelbarrow Co., Asheboro, N. Carolina  
Chattanooga Wheelbarrow Co., Chattanooga, Tenn.  
Cleveland Wheelbarrow Co., Cleveland, O.  
Fairbanks Co., N. Y.  
Jackson Mfg. Co., Harrisburg, Pa.  
Lansing Co., Lansing, Mich.  
Puffer-Hubbard Mfg. Co., Minneapolis  
Sidney Steel Scraper Co., Sidney, O.

**WHEELS GRIDIRON GRIP**  
Whitehead & Kales Co., Detroit, Mich.

**WINCHES**  
\*Clyde Ir. Wks. Sales Co., Duluth, Minn.  
\*Dobbie Fdry. & Mch. Co., Niagara Falls  
\*Ersted Machy. Mfg. Co., Portland, Ore.  
\*Mead-Morrison Mfg. Co., E. Boston  
\*Mundy Sales Corp., N. Y.  
\*Gustav Schaefer Wagen Co., Cleveland  
Advance-Rumely Thresher Co., La Porte, Ind.  
Bethlehem Steel Co., Bethlehem, Pa.  
Chisholm-Moore Mfg. Co., Cleveland, O.  
Dake Eng. Co., Grand Haven, Mich.  
John T. Horton Co., New York  
Ingersoll-Rand Co., New York  
Lidgerwood Manufacturing Co., N. Y.  
Street Bros. Mach. Wks., Chattanooga.

**WINDOW FRAMES AND SASH (Metallic)**

\*Truscon Steel Co., Youngstown, O.  
Wm. Bayley Co., Springfield, O.  
Detroit Steel Prod. Co., Detroit  
E. H. Friedrich Co., Holyoke, Mass.  
Gunsire Steel Co., Youngstown, O.  
David Lupton's Sons Co., Philadelphia  
Penn Metal Co., Boston  
Sykes Co., Chicago

**WIRE AND CABLE**  
\*American Steel & Wire Co., Chicago

\*Williamsport Wire Rope Co., Williamsport, Pa.  
American Cable Co., N. Y.  
Copperweld Steel Co., Braddeck P. O., Rankin, Pa.  
Fischer & Hayes Rope & St. Co., Chicago  
General Elec. Co., Schenectady, N. Y.  
Habirshaw Cable & Wire Corp., N. Y.  
Hazard Mfg. Co., Wilkes-Barre, Pa.  
Macwhyte Co., Kenosha, Wis.  
Marion Insulated Wire & Rubber Co., Chicago  
Nat'l. India Rubber Co., Bristol, R. I.  
N. Y. Insulated Wire Co., N. Y.  
Okonite Co., Passaic, N. J.  
J. A. Roebling's Sons Co., Trenton, N.J.  
Safety Cable Co., N. Y.  
Simplex Wire & Cable Co., Boston  
Standard Underground Cable Co., Pittsburgh, Pa.  
Tubular Woven Fabric Co., Pawtucket, R. I.  
Waterbury Co., N. Y.

**WIRE GLASS**  
Mississippi Wire Glass Co., N. Y.

**WIRE MESH REINFORCEMENT**  
\*American Steel & Wire Co., Chicago  
\*Truscon Steel Co., Youngstown, O.  
Nat'l. Std. Fabric Co., Pittsburgh, Pa.  
Wickwire Spencer Steel Co., N. Y.

**WIRE ROPE FITTINGS**  
John A. Roebling's Son Co., Trenton, N. J.

**WIRE ROPE (See Rope, Wire)**

**WOOD BLOCKS (See Paving Blocks)**

**WOODWORKING MACHINES**  
\*Amer. Saw Mill Mach. Co., Hackettstown, N. J.  
R. L. Carter Co., Phoenix, N. Y.  
Jaeger Portable Power Corp., Detroit  
Jones Superior Mach. Co., Chicago  
Master Woodworker Mfg. Co., Detroit.

**WOOD PRESERVATIVES**  
\*Barrett Co., N. Y.  
Protexol Corp., Kenilworth, N. J.  
Tropical Paint & Oil Co., Cleveland, O.

**WRENCHES**  
Snap-On Wrench Co., Chicago



**For More than a Quarter of a Century Lakewood  
has Served the Construction Industry**

### Paving Equipment

FINISHING MACHINES  
SUBGRADERS  
CARR ROAD FORMS  
GRADEROOTERS  
FLOATBRIDGES  
ALUMINUM STRAIGHT EDGES  
BATCH BOX CARS  
STEEL BATCH BOXES

NARROW GAUGE TRACK AND V-DUMP CARS

Write for Bulletins

**THE LAKEWOOD ENGINEERING CO., Cleveland, Ohio**

### Construction Equipment

CONCRETE MIXERS  
STEEL TOWERS  
CHUTING EQUIPMENT  
MAST CHUTE PLANTS  
CONCRETE CARTS  
CONCRETE BUCKETS AND CARS  
CLAMSHELL BUCKETS  
BIN GATES

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



# The SKIMMER

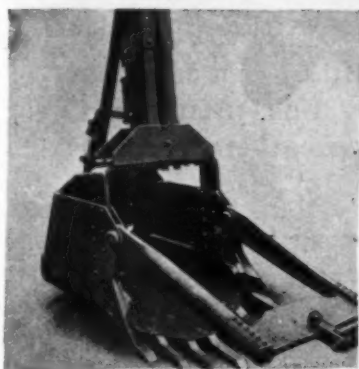


SKIMS

ASPHALT  
BRICKS &  
COBBLES  
CONCRETE  
MACADAM

Finishes the fine grade  
and slopes the bank  
on roads and streets

# The PULLSCOOP



DIGS

DIRT·CLAY  
GRAVEL &  
BOULDERS  
SLATE·SHALE  
BLASTED ROCK

For trenches and  
cellars and always  
finishes on top...

KEYSTONE DRILLER COMPANY, BEAVER FALLS, PENNSYLVANIA

Branch Offices: 170 Broadway, New York City; Monadnock Block, Chicago, Ill.; Joplin, Missouri

AGENCIES IN ALL PRINCIPAL CITIES

9-D-42



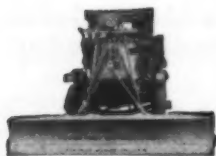
When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

# Stretching the with *Good Roads*

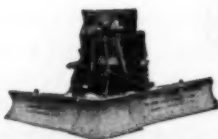


Blade in working position about to strike obstruction.

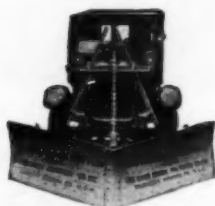
Blade striking obstruction. Large spring is compressed to allow blade to ride safely over. Then blade snaps back into position. Small spring takes up force to recoil.



Good Roads Champion Blade Type for motor trucks—model 11-B heavy. Same plow as 10-C only heavier.



Good Roads Champion High Speed. Adjustable width V-type. Model 21-B for motor trucks. Clears a 14-foot sweep at 20 miles an hour.



Good Roads Champion V-type for motor trucks—model 20.

## Good Roads

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

# Appropriation SNOW PLOWS

Too often the appropriation allotted for snow removal is inadequate. When difficulties are encountered, due to the lack of means to remove snow from the streets, the responsibility is unjustly placed on the officials.

Many city and town officials who have met just such a problem have easily solved it by ordering Good Roads Snow Plows. With Good Roads equipment you can clear a maximum of roads at a minimum cost per mile. They incur no great investment and you can use the trucks you already own as a motive power.

Stretch the appropriation by specifying Good Roads Snow Plows.



Send now for the latest Good Roads Champion Snow Plow catalog.



THE GOOD ROADS MACHINERY CO., Inc.  
KENNETT SQUARE, PA.

Pittsburgh, Pa. . . . . 1523 Oliver Bldg.	Watertown, Mass. . . . . 36 Pleasant St.
New York, N. Y. . . . . 50 Church St.	Portland, Ore., 3rd & Hawthorne Sts.
Albany, N. Y. . . . . 36 State Street	Chicago, Ill. . . . . 49th & Halsted Sts.
Buffalo, N. Y. . . . . 733 Ellicott Square Bldg.	
Philadelphia, Pa. . . . . 2037 Commercial Trust Bldg.	

## SNOW PLOWS

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.



Two carloads of LaPlant-Choate Snow Plows enroute to Maine will soon be assigned to the important task of keeping highways free from snow obstruction



These powerful, all-steel snow plows are used by cities, counties, and states throughout the United States wherever snow conditions are encountered. Various sizes and types of snow plows for all standard makes of trucks and for "Caterpillar" 30 and 60 and 2-Ton Tractors, are described in full detail in our new Snow Plow Catalog. Write for it!



**Mail this Coupon Now**

LaPlant-Choate Mfg. Co.  
Cedar Rapids, Iowa.  
Gentlemen: Send me copy  
of Snow Plow Catalog.

Name .....

Address .....

City and State .....

11-27-C.E.

## LaPlant-Choate Snow Plows Succeed Where Others Fail!

Under date of September 22, 1927, we received a letter relating the snow removal experiences of a community in North Dakota. Two other well-known makes of snow plows were tried, but it took the famous LaPlant-Choate Plow to do the work thoroughly and then emerge from the job in as good condition as when it first nosed into the ice-incrusted snow drifts. A copy of this letter will be sent to you on request.

The hydraulic lift control makes LaPlant-Choate Snow Plows easy to handle under all conditions. The sturdy construction and scientific design of these long-tested and widely-used plows insure long life and high efficiency. Their purchase involves no speculation. They simply do the work and do it quickly, efficiently, and economically. A request will bring our new Snow Plow Catalog giving full information.

[We also manufacture a complete line of All-Steel  
Bulldozers, Extension Reach Trailers, Heavy  
Transport Trailers, and Tractor Dump Wagons.]

**LAPLANT-CHOATE**  
**MANUFACTURING CO., INC.**  
CEDAR RAPIDS, IOWA.

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.



# Dirt Cheap

**T**AKING dirt from the wrong place and putting it in the right place is the contractors' business... It is the business of the "Caterpillar" Tractor to do the work *better, quicker, cheaper.*

*There is a "Caterpillar" Dealer near you.*

Prices	
2-TON . . .	\$1850 <i>Peoria, Illinois</i>
THIRTY . . .	\$3000 <i>Peoria or San Leandro</i>
SIXTY . . .	\$5000 <i>Peoria or San Leandro</i>

## CATERPILLAR TRACTOR CO.

Executive Offices: San Leandro, California, U. S. A.

Sales Offices and Factories:

Peoria, Illinois      San Leandro, California

Distributing Warehouse: Albany, N. Y.

New York Office 50 Church Street

Successor to

**BEST** C. L. Best      The Holt Manufac-      **HOLT**  
Tractor Co.      turing Co.



Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## Check any other paver with it

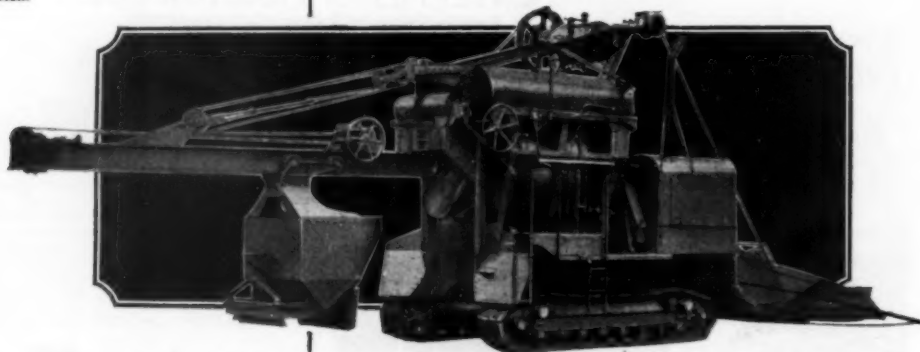
**Heat-Treated Blades, Buckets, Chute**  
defeat the abrasive wear of mixing—hold their size and shape—and preserve Rex Speed season after season.

**8-Second Discharge**  
provides the original Rex high-speed action—and establishes the Rex 72 second cycle.

**Governor Booster**  
Speeds up the engine when the skip raises. It increases drum speed—quickening both charge and discharge. And it drops the engine and drum speed back to normal when the skip reaches the end of its upward trip.

**6-Cylinder Waukesha**  
provides smooth, vibrationless power—you'll notice the difference on the operator's platform. You can still get the standard 4-cylinder Waukesha if you want it.

**Timber Bearings**  
in the speed reduction, drum rollers and other bearings reduce friction and lubrication.



**7-Second Water—Accurate to the pint**  
stops mixing penalties and water hold-ups—and its astounding accuracy meets the most exacting specifications.

**Unit Power Plant**  
incorporates engine and speed reduction into one compact, high-speed unit—this is truly automotive construction.

**Unified Action**  
can add 40 minutes to the paving day by permitting charging and discharging to be handled at one time.

**Foldback Top**  
goes up and down easily and quickly—it's simple and it's power operated.

# The Finest, Fastest Ever Built

**N**EW contributions to even faster operation and still longer life—plus all the speed that made Rex Pavers fast and famous make the New and Greater Rex 27E truly stand out as The Finest, Fastest Paver Ever Built. Check the side column and compare other Pavers with the Rex. If you're interested in more yards per season—and more seasons—send for your copy of the Rex Paver catalogue today.

CHAIN BELT COMPANY, 766 Park Street, Milwaukee

# REX PAVERS

(Reg. U. S. Pat. Off.)

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

# EXTRA CAPACITY

*an advantage even on smaller jobs*

**T**HE Parsons 21 is the outstanding machine for public utilities and contractors whose work includes trench wider than 24 inches.

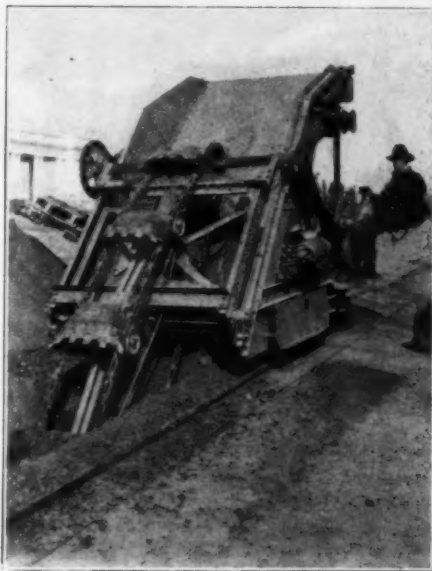
On such work, the ability of the Parsons 21 to handle trench up to 42 inches in width, enables its owners to handle any jobs which other small machines would be unable to touch.

Even on 12-inch trench, the added capacity of the Parsons 21 is a big advantage, since a ditcher strong enough to dig 42-inch trench can easily outwork other small machines. Where work is being crowded, the Parsons 21 has often put in more than 5,000 feet of trench in one day.

## THE PARSONS COMPANY NEWTON, IOWA

Chicago, 11 S. LaSalle St.      New York, 501 Fifth Ave.  
Los Angeles, C. C. Sixbey, 5959 South Alameda Avenue

*Sales Offices in Principal Cities*



## Get the Facts--First Hand

Among the owners who can give you facts from their own performance records on one or more Parsons 21's, are these public utilities and public utility contractors:

Public Service Corp. of New Jersey	Harry W. Angle, Washington D. C.
Long Island Lighting Co.	Pepper Brothers, Syracuse, N.Y.
Bridgport Gas Light Co.	T. Stuart & Sons Co., Boston
Baltimore Consolidated Gas Co.	Western Gas Const. Co., Ft. Wayne
Laclede Gas Co., St. Louis	Walter Sexton, Long Island, N. Y.
Brooklyn Union Gas Co.	
G. M. Geol, New York	

# PARSONS

## PUBLIC SERVICE DITCHER

*Digs Gas, Water, Conduit and Small Sewer Trench*

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# KOEHRING

## Look Over the Koehring 14-S!

**H**ERE'S a big producer of Koehring re-mixed concrete!

Look at the charging skip — takes the full batch, and no need for shoveling aggregate back into skip! It's high speed hoisting and clean charging! Fast discharge—like all the Koehring!

Narrow frame — handy for tight places — and amazingly short turning!

Radiator cooled!

*Worm Drive Transmission* on roller bearings through flexible clutch! All moving parts in oil bath.

Koehring freight car truck type of drum roller bearings, bronze bushed and enclosed in cast housing!

*Drum end control* — operator sees everything, has every lever in arm's reach. He's away from engine fumes!

Know the Koehring — know the 14-S.

Write for Concrete Mixer Catalog No. CM-6

### SIZES

**Pavers** — 7-E, 13-E, 27-E. Auxiliary equipment and choice of power to suit individual needs. Complies with A. G. C. Standards.

**Construction Mixers** — 10-S, 14-S, 21-S, 28-S. Steam-gasoline or electric power. Mounted on trucks or skids. Rubber tired wheels optional. 28-S on skids only. Complies with A. G. C. Standards.

**Dandies** — 5-S, 7-S, 9-S. Single cylinder, 7-S two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

## KOEHRING COMPANY

PAVERS, MIXERS — GASOLINE SHOVELS, CRANES AND DRAGLINES

MILWAUKEE, WISCONSIN

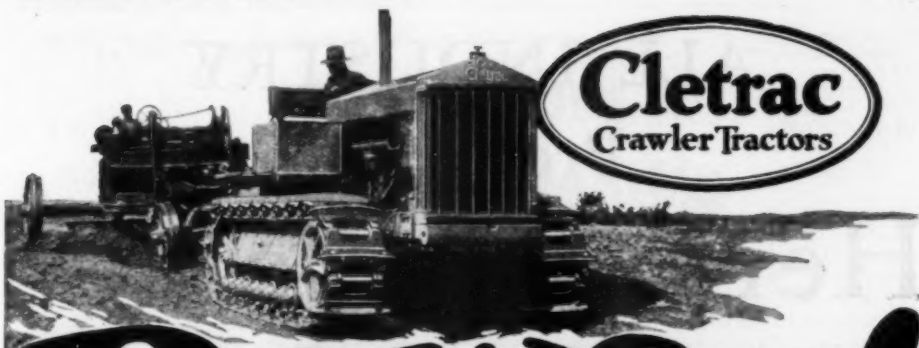
Sales Offices and Service Warehouses in all principal cities

Foreign Department—Room 1370, 50 Church St., New York City, A6297-1  
Mexico, P. O. Legum, Cinco De Mayo 21, Mexico, D. F.



Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.





# Power!

**T**ODAY, more than ever before, larger implements and tandem equipment are being used on big road and land development jobs everywhere. It is the one sure way to cover ground more quickly and to cut time and costs on every project. *Graders of greater capacity—dump wagon and scraper trains instead of single units—this is the modern trend!*

Such peak loads demand the power reserve and the sure-footed traction that CLETRAC delivers in fullest measure. CLETRAC has a record of greater draw-bar pull in proportion to its weight than any other tractor built! It has an exceptional power reserve. It has instantaneous "One-Shot" lubrication to save the time of greasing and oiling. It has speed, easy handling, short turning—every feature for making it the most useful and profitable power unit you can possibly purchase.

## Built in Complete Range of Sizes

There is a CLETRAC Crawler Tractor to fit the power specifications of every industrial tractor operation. The CLETRAC 20—the CLETRAC 30— and the CLETRAC 100 completely cover every power requirement you are called upon to meet.

WRITE—or mail the coupon—  
today for full particulars of  
any or all CLETRAC models.

**The Cleveland Tractor Co.**  
Cleveland, Ohio

THE CLEVELAND TRACTOR CO.,  
Cleveland, Ohio.

Please send complete literature covering  
Cletrac 20 Cletrac 30 Cletrac 100

Name.....

Address.....

# ALL INDUSTRY Profits by Hercules Power

Hercules matchless ability to do a power job better and cheaper enables every Hercules user to set new standards of profit. This ability results directly from Hercules strength and simplicity.

Forty-three per cent *additional* output was secured with Hercules Power in a sawmill.

Work was kept eight months ahead of contract time with Hercules Power in grading equipment.

Hercules loaded five shovelfuls

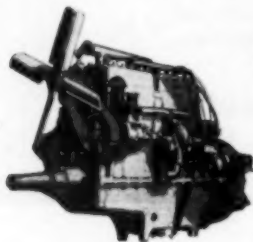
instead of four in excavating. Thus Hercules Power sets new records of endurance throughout American industry.

The simplicity of Hercules design, the consistent precision of Hercules production, and the Hercules factor of strength throughout underlie the successful operation of more than 75,000 Hercules Engines and Power Units. Hercules personal engineering service and the complete Hercules line of fours and sixes assures your getting the right engine in the right place.

HERCULES MOTORS CORPORATION  
Canton, Ohio

# Hercules

E N G I N E S



When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

EDGAR J. BUTTENHEIM  
President

THEODORE R. KENDALL  
Editor

HERBERT K. SAGE  
Treasurer

MYRON MACLEOD  
Advertising Manager

Vol. XV

No. 5

# Contractors and Engineers Monthly

November,

1927

Published Monthly at 443 Fourth Ave., New York, by Bittenheim-Dix Publishing Corporation  
Branch Office: Tribune Tower, Chicago, Ill. Tom Dix, Vice-President; Prentice Ford, Western  
Advertising Manager; George Conover, Assistant Advertising Manager.

## TABLE OF CONTENTS

### Organization—Administration—Construction

Coaticook, Que., Hydro-Electric Power Development.....	55
The Glines Canyon Dam.....	52
Carrying a Large Substructure to Rock in a Congested Locality.....	55
Mechanical Spreading of Asphalt.....	70
Controlling the Flood Waters of the Mississippi.....	76
Earth Handling on a Five Million Dollar Railroad Terminal Job.....	77

### Equipment and Materials

Rock Tunneling and Excavating Without Explosives.....	72
Higher Speed and Lighter Weight Diesel Engines.....	80
Road Builders' Pumps with New Oiling System.....	82
A New Clamshell Bucket.....	83
A New Line of Hydraulic Jacks.....	84
Portable Belt Conveyors for Efficient Material Handling.....	86
A New 2-Cylinder Engine Mixers.....	88
Water Tank for Concrete Mixers.....	90
A Line of Gasoline Engines of 1½- to 6-Horsepower.....	92
An Oil Burning Kettle.....	94
A New Motor Grader.....	94
A Better Type of Highway Guard Railing.....	96
Steel Extension Wheels for Rubber Tires.....	98
A New Heavy-Duty Portable Turbo-Generator.....	100
A New Line of Fast, Economical Trucks.....	102
A Machine for Reclaiming Brick.....	104
A Wedge Gives Positive Adjustment for Concrete Forms.....	106
New Type Mixer Saves Wheelers' Wages.....	108

### News, Notes and Helps

Distributors Exhibit at Trenton Fair.....	61
City Building Expenditures Tabulated.....	64
Two and a Half Years of Craftsmanship Awards.....	68
The Gardner-Denver Co.....	69
Littleford Sales and Distributors.....	69
Current Business Conditions.....	74
Pacific Coast Distributors.....	77
Legal Points for Contractors.....	78
Hasard Wire Rope Company Formed.....	81
Trackson Distributor.....	81
Gallon Branches Occupy New Quarters.....	84
Belle City Manufacturing Company Expands.....	84
New Monarch Distributors.....	84
Milburn Opens Boston Office.....	88
Williams Takes Over Hawley.....	88
Burlington Becomes Chief Engineer for Baker.....	88
Cooper Joins Speeder Staff.....	88
New Conkey Company Distributors.....	88
Bosnian Made Chain Belt Superintendent.....	90
Brownhoist-Industrial Works Merger Approved.....	90
Crawford Resigns as Director of Sales.....	90
Birmingham Office of Hunt Company.....	90
Wire Cable Construction Wins Hudson River Bridge Contract.....	92
Book Reviews.....	92-94
New Trackson Distributors.....	96
New Climax Service Station.....	98
Rome Manufacturing Company's New Branch.....	98
Milburn to Represent Mandy.....	100
Miami Trailer-Scraper Distributors.....	100
Thew Enlarges Sales Staff.....	104
A Service for You.....	110
Directory of Consulting Engineers and Contractors.....	147
Directory of Distributors of Contractors' Equipment.....	151
Index to Advertisers.....	189



## Higher Up . . . Further Out . . .

*S*OMETIMES it's a hard job deciding what length boom and stick you want with your new shovel. Too short—and you have to pass up certain kinds of work. Too long—and you are handicapped on clearance for other work.

Thew Center Drive applied to boom and stick secures greater reach and increased dumping height. This means that when you get a job that looks hard for your size boom and stick you will find, as hundreds of other Thew owners have discovered, that you can easily go further out for each load and then dump higher than you could with an ordinary boom and stick even several feet longer.

THE THEW SHOVEL COMPANY • Lorain, Ohio  
Gasoline, Steam & Electric • Shovels • Cranes • Draglines



*T*HEW Center-Drive is applied to Truck, Crowd-Hoist-Swing Mechanism and Boom.

<b>T</b>	<b>H</b>	<b>E</b>	<b>W</b>
Gasoline or Electric Powered	<b>LORAIN 60 AND 75</b>		Shovels Cranes and Draglines

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



Vol. XV

No. 5

# Contractors and Engineers Monthly

November,

1927

## Coaticook, Que., Hydro-Electric Power Development

By A. A. YOUNG

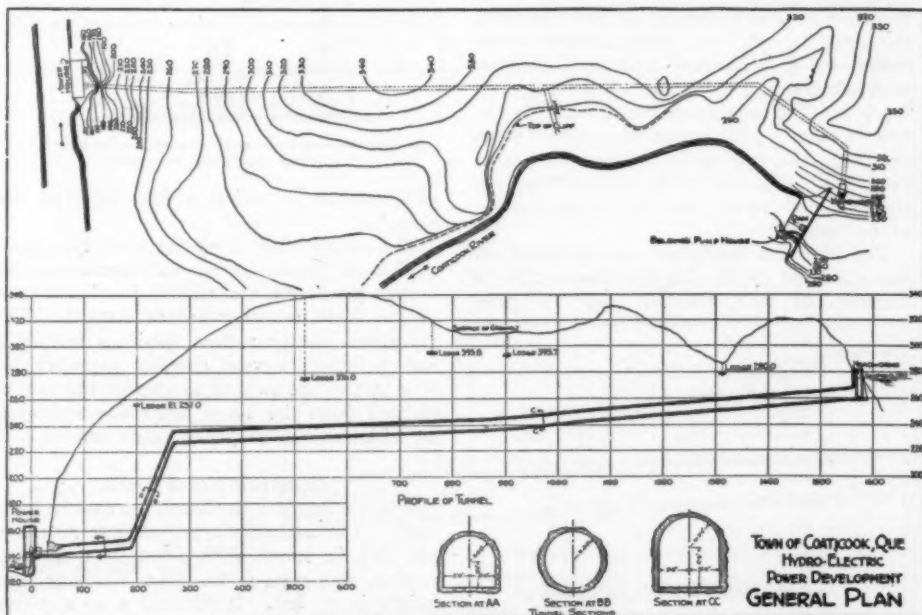
Secretary-Treasurer, Nelson River Construction, Ltd., Montreal and Toronto

THE Town of Coaticook is situated on the Coaticook River, about 20 miles from Sherbrooke and 120 from Montreal. This river flows through the town and has a drop of 175 feet in 1 mile within the town limits. All of the available power has been developed by the municipality and private interests. There were six separate power houses—the town owning and operating two of these through its Department of Light and Power, and supplying the demand of the town. The other four plants were each owned and operated by private interests for their own use.

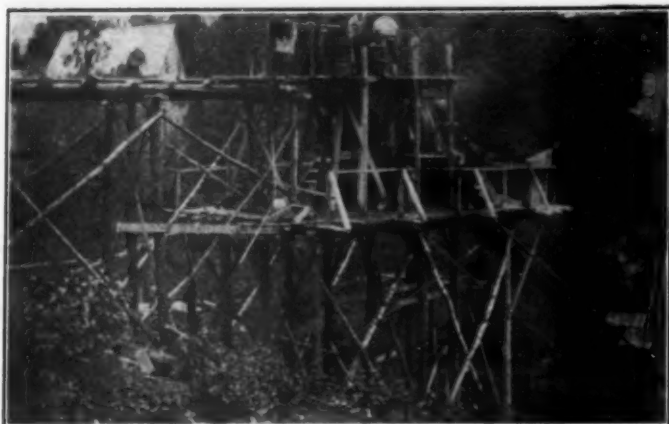
The capacity of the municipal plants was in-

sufficient to meet the demand, and it was decided to proceed with a scheme which concentrated the power of both the municipal, and three of the private plants in one new development, which would increase the municipal power from 550 to 1,500 h.p. and also supply the power needed by the three private concerns whose plants would be flooded out.

The new development was started in April, 1926, and completed in April, 1927. As shown in the general plan, it consists of a concrete gravity dam, a concrete lined tunnel 1,550 feet long, conveying the water from behind the dam to the power house 143 feet below. The machinery is installed in two units, each consisting



GENERAL PLAN OF THE COATICOOK HYDRO-ELECTRIC DEVELOPMENT SHOWING PLAN AND PROFILE OF THE TUNNEL AND THE TUNNEL SECTIONS



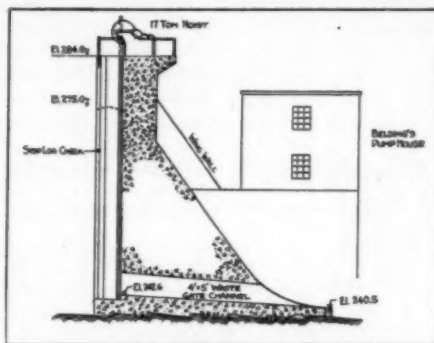
MIXING  
PLANT USED  
FOR  
DAM AND TUNNEL  
LATER  
HOUSED IN  
FOR WINTER  
WORK

of a 1,000 h.p. turbine and a 900 k.v.a. generator, with a direct-connected exciter mounted on the main shaft. The turbines are connected to the tunnel by short steel penstocks 40 inches in diameter. By the provision of heavy flywheels, and the adoption of a low velocity in the tunnel, neither a surge tank nor relief valves are required with the governors set to operate over full range in six seconds. These units operate at 600 r.p.m.

The turbines, designed and manufactured by William Hamilton, Ltd., of Peterboro, Ont., are of the horizontal, single runner, scroll case type, each capable of developing 1,000 horsepower at a speed of 600 r.p.m. under an effective head of 136 feet. Each turbine is controlled by a Woodward hydraulic governor with belt driven fly balls and belt driven pumping unit. The unbalanced thrust from the turbine is taken up by means of a Gibbs' thrust bearing. The bearing is mounted on a separate stand adjacent to the quarter-turn and rigidly bolted thereto, forming an integral part of the unit.

The electrical equipment was designed and manufactured by the English Electric Co. of Canada, Ltd., St. Catharines, Ont. The gene-

rators are 2,300 volts, 60 cycle, 3 phase, 900 k.v.a. at 80 per cent power factor machines, of the horizontal revolving field type. The machines feed directly to the lines at 2,300 volts, no transformers being used, as the furth-



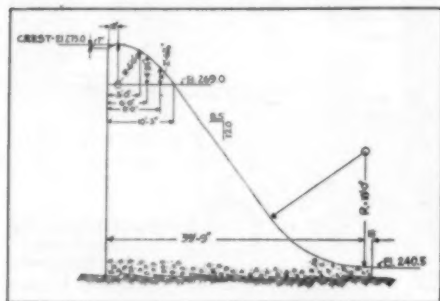
CROSS SECTION OF DAM

est consumer is within a few miles of the plant.

The switch board is of the truck type, containing six panels, one for each generator, one exciter panel and one control panel for each of the three outgoing feeder circuits. The six panels occupy a floor space 12 feet by 3 feet 6 inches, a very compact arrangement. Any part of the switchboard equipment can be isolated from the board and made accessible by withdrawing the panel which carries it.

### Construction of Dam

Construction was started on the dam in June, 1926. It is a gravity type, concrete structure 150 feet in length with a 107 foot spillway section, with crest at El. 275.0. The maximum height is 37 feet. It contains a 4- x 5-foot gate and sluiceway with invert at 242.6. This



SECTION OF DAM AT SPILLWAY

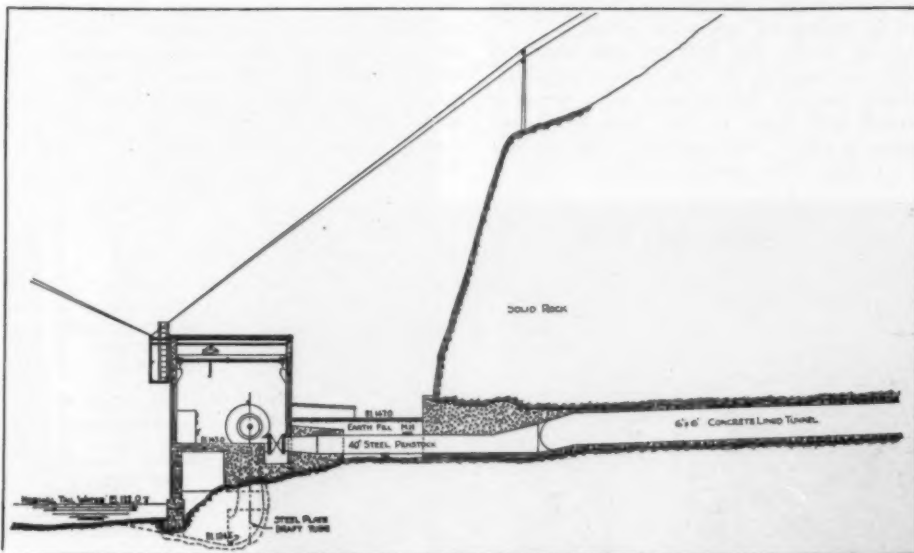
was provided to draw down the pond below the level of the tunnel intake, and was also used for construction purposes. This gate is operated from a pier on the dam, by a 17-ton hoist. The gate and hoist were manufactured by W. M. Kennedy & Sons, Ltd., Owen Sound, Ont. Access to the pier is afforded from the head wall of the dam by a steel footbridge.

The dam is founded on rock. It is a slate-like formation, somewhat seamy, shatters easily on blasting, and lies at a dip of 45 degrees. The site of the dam was chosen immediately above a sheer drop of about 20 feet in the bed of the river. Consequently, very little in the way of a downstream cofferdam was required.

Any water leaking in through the upstream cofferdam was drained down the river—no pumping was necessary. The dam was built in two sections. The one containing the sluiceway and gate was built first inside a cofferdam diverting the water to the other side of the channel. When this section was carried to El. 269, or within 6 feet of the crest, the cofferdam was removed, and the water diverted through the sluiceway by means of another cofferdam, inside of which the remaining section of the dam was built. The photographs show the various steps in the construction. The first section built contained seven vertical checks 12 inches deep, into which the other section was keyed. Closure was effected by simply closing the gate on the sluiceway. The cofferdams were built to handle but little more than the ordinary flow, as no economical means



FIRST SECTION OF DAM SHOWING FORMS AND MIXING PLANT WITH CONCRETE CHUTES



SECTION THROUGH NO. 1 WHEEL AND PENSTOCK AT THE COATICOOK DEVELOPMENT



**FIRST SECTION OF DAM BUILT SHOWING COFFERDAM AND CONCRETE CHUTE**

could be taken to guard against the rise in river level that heavy rains would produce. They consisted of two rows of wooden sheeting made watertight by filling and packing with stone and clay. Concreting was carried on close behind the form work, and calcium chloride was used to provide a quicker set and thus minimize damage due to possible flooding. Fortunately, no abnormal rise in river level took place during construction, which was carried on during the low water period.

Owing to the fact that the rock shattered easily on blasting, no cut-off was provided. Instead, the rock was grouted under pressure through drill holes 15 feet deep on 5-foot centers in a row 3 feet upstream from the heel of the dam. The foundation for a width of

10 feet from the heel was carefully prepared and all seams grouted, but no particular pains were taken to secure watertightness under the remainder of the base of the dam. A stone-filled box drain was laid parallel to and 5 feet downstream from the heel, with two pipes extending to the toe to relieve the base from uplift pressure arising from seepage at the heel. Before the cofferdams were removed, the bottom of the river between them and the new dam was flooded to a shallow depth, and air under pressure was forced into the box drain through the pipes connected to it. As the air was detected escaping from seams immediately above the dam, the bed of the river was sealed with a concrete mat 12 inches thick and 10 feet wide along the face of the



**FIRST  
SECTION OF  
DAM FINISHED  
WITHIN  
8 FEET  
OF CREST  
SHOWING  
COFFERDAM  
FOR  
SECOND SECTION  
AND CHECKS**



dam. The precautions taken against seepage were effective, as only a slight trickle escapes from the drain pipes with the pond full.

Concrete was deposited from Insley chutes hung on a cable stretched across the river between the high banks on either side. A  $\frac{1}{2}$ -yard London mixer was set up on one bank to discharge directly into the chutes. The mixture was charged from a storage pile deposited close by and above it.

All concrete was made from pit run gravel selected for size at the pit and hauled by wagons to the storage pile, and spread as it was unloaded, resulting in a reasonably uniform mixture. The material was particularly free from organic matter, and though rather fine, made a good concrete. Twenty-eight day test cylinders showed 1,800 pounds for 1:7 and 2,400 pounds for 1:5 mixtures. The leaner mixture was used in the core of the dam, and the 1:5 mix on the pier, headwall, and upper 6 feet of the crest, and at all surfaces for a depth of at least 1 foot. Canada Cement Co. cement was used throughout the job.

### Construction of Tunnel

The intake to the tunnel is 25 feet upstream from the dam, and is provided with trash racks and stoplogs. A gate is also provided, designed to close automatically should the velocity in the tunnel increase abnormally, due to a break in the penstocks or turbines. This gate may also be operated by hand. For a distance of 1,300 feet from the headworks, the tunnel has an 8 x 7 foot horseshoe section.



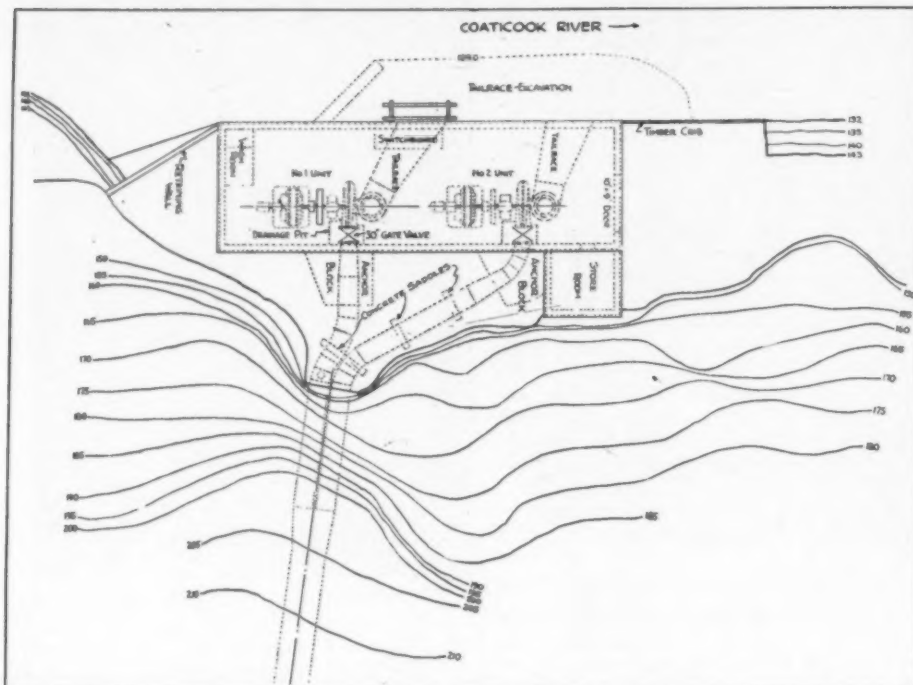
WALL FORMS OF TUNNEL



WORKING AT THE TUNNEL HEADING

This section is followed by a 6 foot 6 inch circular section 114 feet long and at an angle of 45 degrees. The last section is a 6- x 6-foot horseshoe section, 140 feet long, having the same area as the stope, or sloping section. The penstocks are connected into the end of the last section.

An adit 130 feet long was driven from the river bank to intersect the line of the tunnel 680 feet from the headworks. Three Ingersoll-Rand portable air compressors were set up nearby. One was a 9- x 8-inch, 250 cubic foot machine, one an 8- x 6-inch machine delivering 210 cubic feet, both gasoline driven. A 130 cubic foot electric driven compressor was also used. Electric power was not obtainable for all three compressors. Leyner-Ingersoll drifting drills were used, and a No. 33 Leyner drill sharpener. For miscellaneous drilling work, a D.C.R. No. 23 self-rotating jack-hammer was used. Work was carried on from the two adit headings and from both portals simultaneously. Considerable trouble was experienced at first with missfires, which were believed due to the explosion in one hole forcing water in the seams to the adjoining holes and wetting the fuse near the cap. This was overcome by coating the cap and fuse for a length of 10 inches with a rubber solution. An average net advance of 4.8 feet per shift per heading was the best that could be accomplished without excessive overbreak in rock of this



PLAN OF THE POWER PLANT SHOWING THE PENSTOCK AND CONTOUR OF ADJACENT TERRAIN



VIEW SHOWING END OF PENSTOCK

character. Mucking was done by hand and five 1-yard dump cars were used, drawn on rails by ponies. Acetylene gas was used for lighting.

The tunnel was lined throughout with concrete. The same mixing plant used for the dam mixed the concrete. It was admitted to the tunnel through the headworks, it being only necessary to divert the chutes there from the dam. The concrete dropped directly into cars in the tunnel which then ran by gravity to any point between the headworks and the top of the slope. Ponies pulled the empty cars back again. The forms were all made up in panels. Just enough of these were used to enable the carpenters to keep ahead of the concrete gang, using the forms over again. Concrete was placed by hand, shoveling direct from the cars. The slope was poured from the top. The 6 x 6 section near the power house, was poured from the mixer used on the power house, which was set up on the cliff about 140 feet above it.

Each penstock was handled in four sections, and riveted in the field. On completion the tunnel was tested for leakage, which amounted to only 0.15 cubic foot per second, giving the



VIEW INSIDE OF THE TUNNEL SHOWING THE TOP OF STOPE

contractor a substantial bonus. The mix used for lining was 1:5, all placed during the winter. The aggregates were heated by a McLeod burner in the mixer drum, which brought the concrete to a temperature of 100 degrees.

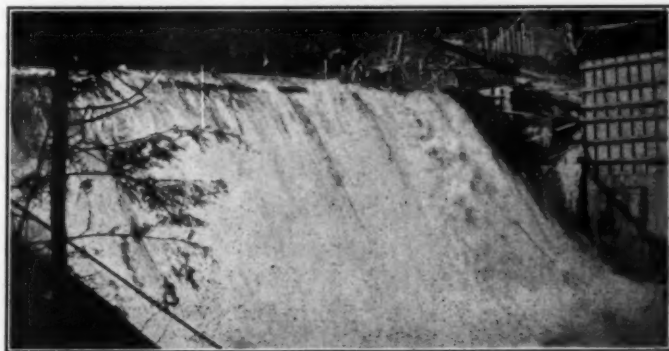
Excavation for the power house and tail-

races was carried out inside a cofferdam by hand. Most of the wall footings and machinery foundations were on solid ledge, but some parts on very large boulders with the spaces filled full of concrete down to ledge. A Wettlaufer mixer was placed on the cliff about 140 feet above the site and fed concrete down chutes suspended from a cable stretched across the river. The power house is concrete throughout. As the floor contained a great deal of complicated form work to provide checks, etc., for the machinery, the walls and roof were poured first in order to close in the building before winter. As for the other concrete work, the aggregate was prepared in 1/4-yard dump cars which were filled to a predetermined level at the storage pile near the mixer, and ran by gravity to it. Water was measured in a tank above the mixer.

The power house is provided with a 5-ton hand-operated traveling crane, supplied by the Herbert Morris Crane & Hoist Co. of Niagara Falls, Ont. The machinery was delivered to the power house by the general contractor. It was brought down from the top of the cliff on a wooden skidway, provided with an air winch. The heaviest piece weighed 5 tons.

The plant was designed and the construction supervised by W. S. Lea, Consulting Engineer, Montreal. Nelson River Construction, Ltd., were the General Contractors.

FLOOD  
TOPPING DAM  
JUST  
BEFORE  
COMPLETION OF  
WORK



### Distributors Exhibit at Trenton Fair

TWO well-known distributors in the New York-New Jersey territory were among the exhibitors at the Trenton Fair held in Trenton, N. J., September 26-October 1. C. F. Seabrook Co., Inc., of Bridgeton, N. J., and New York City, exhibited Caterpillar tractors, snow plows and contractors' equipment. John H. Michelson of Trenton, J. George Bauer, Bridgeton, and H. P. Low of Jersey City, the New Jersey representatives of the Seabrook Co., were on hand.

Lee T. Ward Co., 617 Filbert Street, Philadelphia, Pa., exhibited a 10-S Jaeger mixer, 3 1/2-L Jaeger mixer, trailer outfits and contractors' equipment. H. T. White, Trenton representative of the Ward Co., was in charge of the exhibit, while Lee T. Ward and "Brother" Twitchell were on hand a large portion of the time.

Both of these distributors are members of the New Jersey Constructors Association, whose headquarters are at Trenton, N. J.

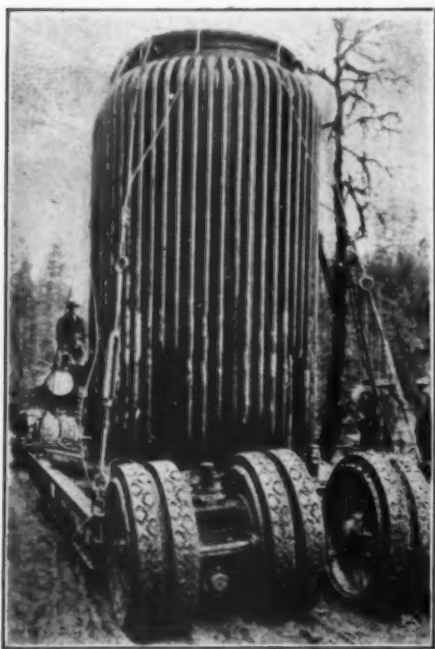
## The Glines Canyon Dam

*Interesting Power Development on the Elhwa River Recently Completed*

**T**O keep pace with the growth of the Washington Pulp & Paper Corporation in the manufacture of paper, further power development was found necessary. The present hydro-electric development on the Elhwa River has several small units capable of generating up to 25,000 kilowatts under favorable conditions. To increase the hydro-electric capacity the recently completed Glines Canyon project was started. The new plant is approximately five miles farther up the same river and in its initial improvement developed 17,500 horsepower. The dam site is situated about 17 miles southwest of Port Angeles at a point where the valley forms a box-like canyon. This permits a natural storage basin which was formerly heavily timbered but which was cleared prior to the beginning of construction. The dam which is completed is of the constant angle arch type and contains approximately 25,000 cubic yards of concrete. It is over 200,000 feet high and has a crest line length of 340 feet. The dam impounds about 40,000 acre feet of water and forms an artificial lake  $2\frac{1}{2}$



THE GLINES CANYON DAM WHEN NEARING COMPLETION



CATERPILLAR TRACTOR HAULING TRANSFORMER ON GLINES CANYON JOB

miles in length and half a mile wide. The storage reservoir consists of about 500 acres of land, the heavy timber and underbrush having been partly cleared and burned.

A tunnel 600 feet long and approximately 14 feet in diameter through solid rock handles the water from the reservoir to the intake. In addition 250 feet of 11-foot diameter pressure pipe was installed. This produces an effective head of 190 feet. A surge tank of differential type is installed at the junction of the pressure pipe and the penstock line.

A single General Electric unit at present comprises the power plant. The unit is located 600 feet below the dam site on the river channel. It is a 17,500 horsepower, 225 r.p.m. vertical shaft hydraulic turbine and generator with auxiliary units and all necessary appurtenances. The power is transmitted through outdoor step-up transformers and seven miles of transmission line have been built in connecting to the present system.

### Features of Construction

Some of the features of the construction were the Sauerman dragline system for excavating the river bed, as well as obtaining a portion of the sand and gravel for the con-



struction. The problem of handling the material from Port Angeles to the dam site, a distance of 17 miles, was quite severe owing to poor road conditions and wet weather. All of the material had to be hauled by truck and trailer from the docks or cars in Port Angeles. Five miles of heavy road construction were needed to reach the site. Pioneering work was carried on with mule pack trains for the opening of camp. Near the conclusion of the work about 350 men were employed in construction and the work was completed in May.

This development was done under the direc-

tion of Thebo, Starr and Anderton, Inc., engineers and constructors of San Francisco, Calif. W. A. Whitmire was general superintendent of construction. While this plant is not large when speaking of power development, it is particularly interesting in view of the dam proper, which is very much in the shape of a plug and should make an ideal water-tight power-producing structure.

ACKNOWLEDGMENT: We are indebted to William Einzig, Purchasing Agent, Washington Pulp & Paper Co., Port Angeles, Wash., for the data on which this article is based.

## Two Story Brick Building Collapses During Alterations Because of Overloading



*Underwood & Underwood*

### BUILDING AT EAST 152ND STREET AND THIRD AVENUE, BOROUGH OF THE BRONX, NEW YORK CITY AFTER FAILURE

According to P. J. Reville, Superintendent, Bureau of Buildings, Borough of the Bronx, New York City, the original building was erected in 1913 and completed October 30, 1913. Alterations were commenced recently and while the front wall was being taken down above the second story, the contractor evidently piled brick on the second floor, causing the floor to be overloaded, a portion of its collapsing and falling to the first floor, slightly injuring one workman. The building will be considered unsafe until the damaged floor beams have been replaced with new material in accordance with the approved plan on file in the Bureau of Buildings.

## City Building Expenditures Tabulated

*Government, Civic and Private Construction Data Made Available by the Bureau of Labor Statistics*

OF interest to building contractors and engineers is the announcement by the Bureau of Labor Statistics of the annual per capita expenditures for various kinds of buildings in cities with a population of 200,000

or more, for the period of 1921 to 1926. The statistics include Government buildings and civic projects as well as residences. The table of expenditures as announced by the Department follows:

	Amuse- ment buildings	Garage and service stations	Churches	Schools and libraries	Factories, stores, ware- houses, office buildings, etc.	*Public buildings and works	† Total non-res- idential	Total residential
Baltimore.....	\$0.42	\$3.55	\$1.07	\$3.90	\$3.55	\$1.17	\$20.15	\$24.28
Birmingham.....	1.91	1.58	2.34	3.76	13.99	1.41	25.41	32.96
Boston.....	1.49	5.10	.50	1.67	13.43	1.30	25.89	26.58
Buffalo.....	1.67	3.20	1.49	2.27	9.34	.27	18.48	25.16
Chicago.....	2.23	3.21	1.54	3.94	17.55	1.90	32.36	63.83
Cincinnati.....	1.63	3.22	1.15	2.08	18.78	.17	19.01	33.03
Cleveland.....	1.53	2.19	.97	2.99	13.16	2.66	25.22	34.17
Columbus.....	1.10	4.35	1.31	3.68	12.49	1.03	24.75	50.88
Dallas.....	2.50	2.67	2.30	2.25	24.15	1.51	38.34	68.12
Denver.....	.63	4.61	1.21	4.59	9.11	.61	23.10	38.62
Detroit.....	1.80	5.69	1.52	4.49	16.60	.70	32.00	71.73
Indianapolis.....	1.29	3.38	1.61	2.04	10.48	1.38	20.92	37.16
Jersey City.....	.54	3.11	2.49	6.34	10.88	3.53	29.03	30.90
Kansas City.....	2.30	2.03	1.92	3.87	11.91	.53	23.62	39.74
Louisville.....	1.16	2.35	2.47	1.59	10.16	1.46	21.88	40.97
Milwaukee.....	1.88	4.05	.85	2.66	8.19	.90	19.40	35.73
Minneapolis.....	.80	2.79	.96	4.06	8.52	1.74	19.45	36.33
Newark.....	1.85	6.00	.36	.98	17.61	2.21	31.53	36.76
New Orleans.....	1.67	.64	.67	2.44	7.35	.27	14.52	18.24
New York.....	3.51	5.03	1.03	3.81	20.56	1.10	36.34	89.80
Bronx.....	4.35	7.34	1.09	5.84	10.02	1.79	30.97	125.48
Brooklyn.....	3.62	4.95	.88	3.15	7.72	.90	22.20	77.69
Manhattan.....	3.04	3.47	1.05	2.36	39.94	.82	52.44	54.63
Queens.....	4.11	8.29	1.46	7.87	13.13	1.32	39.85	214.56
Richmond.....	1.16	2.39	.93	6.81	7.35	4.15	24.75	68.25
Oakland.....	2.28	5.06	.60	4.49	17.50	2.99	36.16	66.05
Omaha.....	2.35	2.10	.92	5.42	8.36	.51	20.13	34.60
Philadelphia.....	1.31	3.26	.86	3.52	13.03	1.81	25.26	29.58
Pittsburgh.....	1.47	3.65	1.08	2.87	9.69	.62	20.25	29.26
Providence.....	3.11	10.48	1.03	3.81	10.37	1.55	31.48	36.98
Rochester.....	1.58	4.63	2.13	3.35	9.87	.86	23.85	35.26
St. Louis.....	1.52	1.96	.56	1.73	9.48	.09	16.41	21.94
St. Paul.....	.64	4.41	1.26	4.51	10.44	8.43	32.32	50.42
San Antonio.....	2.50	1.65	1.59	1.70	6.26	2.05	16.47	26.20
San Francisco.....	1.63	1.52	.60	3.92	15.08	2.46	26.43	47.67
Toledo.....	.33	3.24	* 2.02	4.12	8.71	.13	19.12	20.42
Washington.....	1.22	4.09	2.12	4.22	11.73	.27	25.35	71.88

\* Includes Government buildings, courthouses, city halls, jails, prisons, railroad stations, car barns, bridges, electric light plants, etc.

† Includes per capita expenditure for sheds, stables and barns, etc., not included in distribution.

ACKNOWLEDGMENT.—From a report in The United States Daily.



**TWO BAY CITY 16-B FULL-CRAWLER EXCAVATORS WORKING ON A STORM SEWER IN NEWARK, N. J.**  
The machine in the foreground is owned by the Newark Independent Contracting Co., Newark, N. J., and the second Bay City machine seen in the distance is owned by De Falco and Del Visco of Montclair, N. J. These machines are equipped with Full-Crawler excavators and trench buckets and are working on a job laying a 36-inch concrete pipe for a Newark storm sewer.

## Carrying a Large Substructure to Rock in a Congested Locality

*20,000 Yards of Earth and Rock Excavation and 2,500 Yards of Concrete Rapidly and Safely Handled by Trucks and Derricks*

**A**T Seventy-third Street and Broadway, New York, where the very irregular, soft, rotten surface of the rock slopes sometimes as much as one to three, and is overlaid with 20 to 40 feet of earth, fill and rubbish, there is now being erected the \$4,000,000 Central Savings Bank, occupying all of the 200- x 131-foot city block, and having the general excavation carried down by steam

by a high fence through which an entrance for trucks was made to a 40- x 40-foot working platform at street level, where two of the electrically driven concrete mixers were located, and cement and aggregate were unloaded in small quantities.

On the east side of the lot, pedestrian traffic was maintained by constructing a heavy sidewalk platform over the old vault at curb line



**STEAM SHOVEL AND 5-TON TRUCK IN 20,000-YARD EXCAVATION**

The sides of the excavation are retained by 3-inch wood sheet piling and bracing, while the sidewalk is carried on movable beams and shores. In the foreground is seen the wooden ramp installed for trucking

shovels to about ground water level at an elevation of 18 feet below the curb.

About 20,000 yards of material were removed, commencing last February, by a fleet of 5-ton automobile trucks that formed a continuous procession up and down a steep ramp serving the two steam shovels, and passing through the street without interruption to the traffic, which at this point is always heavy during and beyond business hours.

As usual, the sides of the lot were enclosed

and supporting it on longitudinal stringers that overlapped several feet where they took bearing on transverse beams supported by vertical posts or cribbing, thus enabling the latter to be shifted several feet to provide for construction operations below without interfering with the sidewalk traffic.

On the west side of the lot it was unnecessary to provide a sidewalk platform, and a small amount of the space adjacent to the curb was occupied by small movable buildings con-

taining the contractor's and architect's offices, tool storage, shops, two electrically driven air compressors made by the National Brake & Electric Co., and their receivers. Where the outer walls of the old sidewalk were not retained, 3-inch square-edged wooden sheet piles were driven around the side of the lot by double-acting steam hammers handled by 75-foot booms of wooden stiffleg derricks equipped with electrically driven 2-drum Lidgerwood hoisting engines with swingers.

Considerable difficulty was anticipated, not only from the large quantity of ground water encountered, but from the irregular character of the stratum overlying the rock which contained old masonry, debris, buried obstructions and numerous large boulders, making the excavation treacherous and calling for provisions in the contract for the use of pneumatic caisson process if necessary.

In eight weeks, the ground water level was reduced about 8 feet by steady pumping in a  $3\frac{1}{2}$ -x- $4\frac{1}{2}$ -foot sump excavated 30 feet below sub-grade, and lined with Lackawanna steel sheet piles at the bottom, and with wooden sheeting at the top. Later, the pit furnished the required excavation for one of the 54 regular foundation piers that were built in similar

pits, most of them about  $6\frac{1}{2}$  x  $7\frac{1}{2}$  feet at the top, with the sides retained by horizontal boards for the shallower pits, and by Lackawanna steel sheet piles for the deeper ones.

Considerable excavation of the unsound rock was necessary to secure satisfactory bearing for the footings. It generally was first drilled with jackhammers making holes about 4 inches apart all around the edges, and four inclined lifting holes in the center, all of which were charged with small quantities of 40 per cent dynamite, and covered before firing with one or more large wire rope mats. When the rock was soft enough, it was broken by pavement busters, which, with the jackhammers, were supplied with compressed air from a large distributing main with numerous valved branches commanding all portions of the lot.

The earth excavations in the sheeted pits were difficult and delicate operations, both on account of the obstructions encountered, and because of the ground water, which, notwithstanding the pumps in the sump, seeped into the pits in large quantities, and was efficiently removed by half a dozen electrically driven pumps mounted on small trucks, and by a 3-inch centrifugal pump.

The saturation of the ground, however, made



FOUNDATION PIT IN FOREGROUND STARTED WITH HORIZONTAL WOOD SHEETING, THE PILE PIERS EXTENDING UNDER THE PAVEMENT

Note system of bracing for loose earth





**GENERAL EXCAVATION 20 FEET DEEP WITH EARTH RETAINED BY WOOD SHEET PILES AND HEAVY SPUE BRACING**

The derrick with long boom and counterweighted stiff legs is seen supported on the crib. Shallow pits are sheeted with horizontal planks

it very treacherous, and increased the difficulty of removing the boulders, some of which interfered with the sheet pile driving, and had to be block-drilled and blasted, or very carefully undermined and withdrawn to avoid disastrous cave-ins. Sufficient care and skill were, however, exercised to secure the successful completion of the work without the anticipated necessity of employing the slow and costly pneumatic caisson method.

The pits were filled with 1:2:4 concrete made with Cow Bay sand and gravel and with portland cement that was delivered directly from the Knickerbocker mixing machines to wooden chutes through which it was spouted by gravity to the pits without requiring any other handling or distribution.

A large amount of concrete was also required for the heavy retaining walls 22 feet high that protected the sides of the main excavation, and were made in two lifts separated by a horizontal construction joint with a wide rectangular continuous groove in the top of the lower section of the wall to provide for an interlocking tongue in the upper section.

The wooden wall forms were made with

horizontal boards nailed to verticals 24 inches apart, through which Richmond Tyscrus were inserted 3 feet apart vertically to prevent spreading and eliminate most of the exterior bracing that would otherwise have been required. These consisted of permanent wire portions guaranteed not to stretch under 4,000 pounds strain, which at each end received standard  $\frac{1}{2}$ -inch lag-screws and bevelled washers, both of which were removed for repeated use when the forms were stripped, leaving conical holes in the surface of the concrete which were easily pointed with cement mortar.

Although the floor concrete, from 6 to 12 inches thick, was laid on the surface of the earth and rock at floor level, it was reinforced by about 90 tons of deformed bars, thus giving it abundant strength to span the distance of about 30 feet between foundation piers and avoid the possibility of trouble through settlement. On top of this floor there was, underneath the large bank vault with concrete roof and side walls 2 feet thick, an additional 12-inch upper floor slab reinforced with wire mesh.

The floor concrete, like that in the founda-

tion piers, was spouted to place directly from the mixers, as was most of that in the lower portion of the retaining wall. That in the upper portion of the wall was mixed in a portable machine readily moved from place to place, or delivered to wheelbarrows to dump directly into the upper parts of the forms.

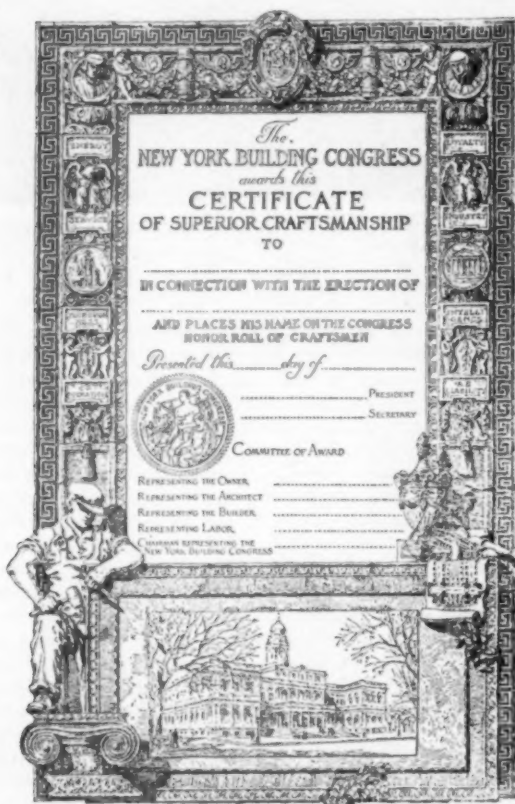
Most of the foundation piers supported only a single column, and owing to their small dimensions, permitted only one or two men to work in each pit, although several pits were excavated simultaneously, and the substructure work was completed in about four months by a maximum force of 100 men employed by the contractors, Spencer, White & Prentis.

The substructure of the building supports a superstructure rising 140 feet above the curb and having a steel framework with long-span roof trusses over the wide and high banking room. These trusses have suspended from them three floors and the ceiling of the banking room, while mezzanine floors are built on each side of the banking room.

York & Sawyer are the architects, and the Hegeman-Harris Co., Inc., are the contractors for the building, which, although designed essentially as a bank, and to be used for bank purposes, has about 40 per cent of the total volume of space rentable for commercial purposes.

## Two and a Half Years of Craftsmanship Awards

### Mechanics Value Certificates and Gold Buttons



#### CERTIFICATE OF SUPERIOR CRAFTSMANSHIP

The certificate is a framed steel engraving 15 x 21 inches. The design was chosen in an open competition and is the work of Rudolph De Getto. It is impressive both for its own artistry and for the ideal it symbolizes.

THE Committee on Recognition of Craftsmanship of the New York Building Congress has issued a report covering two and a half years' activity in rewarding the skilled workmanship of building mechanics in Greater New York by presentations of certificates and gold buttons.

During this period, 371 certificates and gold buttons were presented to honor craftsmen on twenty-seven buildings. The award is made in the building on which the craftsmen worked. A Committee of Award is appointed consisting of a representative of the owner, architect, builder and labor. The Chairman of this Committee is a member of the Committee on Recognition of Craftsmanship of the New York Building Congress and the selection of craftsmen is made through this Committee of Award. Candidates are proposed by the architects, builder's superintendents and subcontractors on the building. Skill, fairness, reliability and cooperation are among the determining factors in the selection.

It is the policy to make only one award to a trade on each building. Unless the quality of the work is superior no award is made. No foreman or supervisor may receive a certificate, awards being made only to workers themselves. The men who receive these awards become Honorary Craftsmen Members of the New York Building Congress without dues or

vote, and craftsmen meetings are held at regular intervals where their advice and counsel is sought and questions pertaining to better workmanship in the building trades are discussed.

The certificate presented to an honor craftsman is a framed steel engraving fifteen by twenty-one inches. The design was chosen in an open competition and is the work of Rudolph De Getto. The name of the craftsman, the building on which the certificate was awarded, the date, and names of the officials of the Building Congress and Committee of Award are written in. It is impressive both for its own artistry and for the ideal it symbolizes.

Among the buildings on which awards to craftsmen have been made are the Barclay-Vesey Building, Seamen's Bank for Savings, General Motors Building, John Jay Hall Building Columbia University, Graybar Building, Savoy-Plaza Hotel, Farmers' Loan & Trust Co. Building, Railroad Cooperative Building & Loan Assn., National Bible Institute, New Madison Square Garden, New York Academy of Medicine, Montefiore Country Sanatorium, and Paramount Theatre & Office Building.

In the New Madison Square Garden a bronze tablet was erected, this being a particularly appropriate method of giving permanency to the recognition of all the craftsmen who contributed to the construction of the building.

The work of the Committee has been well received by owner, architect, builder and organized labor and it has proved a practical step in a revival of the spirit of craftsmanship in the worker. The Committee reports that the

THE  
NEW MADISON SQUARE GARDEN  
CORPORATION  
1925

TO THESE MEN  
WHO WITH THEIR HEARTS AND HANDS  
WORKED TO MAKE THIS BUILDING  
A MONUMENT TO GOOD CONSTRUCTION  
THE NEW YORK BUILDING CONGRESS  
HAS AWARDED  
CERTIFICATES OF CRAFTSMANSHIP

MARTIN CORCORAN CARPENTER	ARTHUR J. CERI ROOFER
MICHAEL CUSTIN TILE SETTER	CHARLES DAVIS BRICKLAYER
JAMES DEVLIN WIRE LATHER	WILLIAM FLANNAGAN PLUMBER
ALFRED GIESLASH TERRAZZO WORKER	WILLIAM JOHNSON CARPENTER
JAMES JANNISAKIS SHEET METAL WORKER	JOHN POWERS WALL SETTER
SAVATONE PIZZO LATHER	ANTHONY ROWLAND STEAM FITTER
ANTHONY STROBEL ORNAMENTAL IRON WORKER	GUSTAVE WINTERS ELECTRICIAN

STANLEY DE LANE  
DESIGNER

#### BRONZE TABLET

The above photograph shows the bronze tablet erected in the New Madison Square Garden and is a particularly appropriate method of giving permanency to the recognition of all craftsmen who contributed to the construction of the building.

honor craftsmen are thoroughly in sympathy with the idea and anxious to cooperate in every way in the fulfillment of the Committee's program.

#### The Gardner-Denver Company

THE Denver Rock Drill Manufacturing Co., Denver, Colo., and the Gardner Governor Co., Quincy, Ill., have merged to form the Gardner-Denver Co., of Denver and Quincy.

The Gardner Governor Co. has been established 68 years and has attained an enviable record both for the quality of parts and the character of its service. It has manufactured pumps, governors and compressors, while the Denver Rock Drill Manufacturing Co. makes air-actuated rock drills, paving breakers, clay diggers, drill steel sharpeners and hoists. The merger of the two companies now places the new company in a position to offer a very complete service with no overlapping in the lines and a simplification of the selling problem.

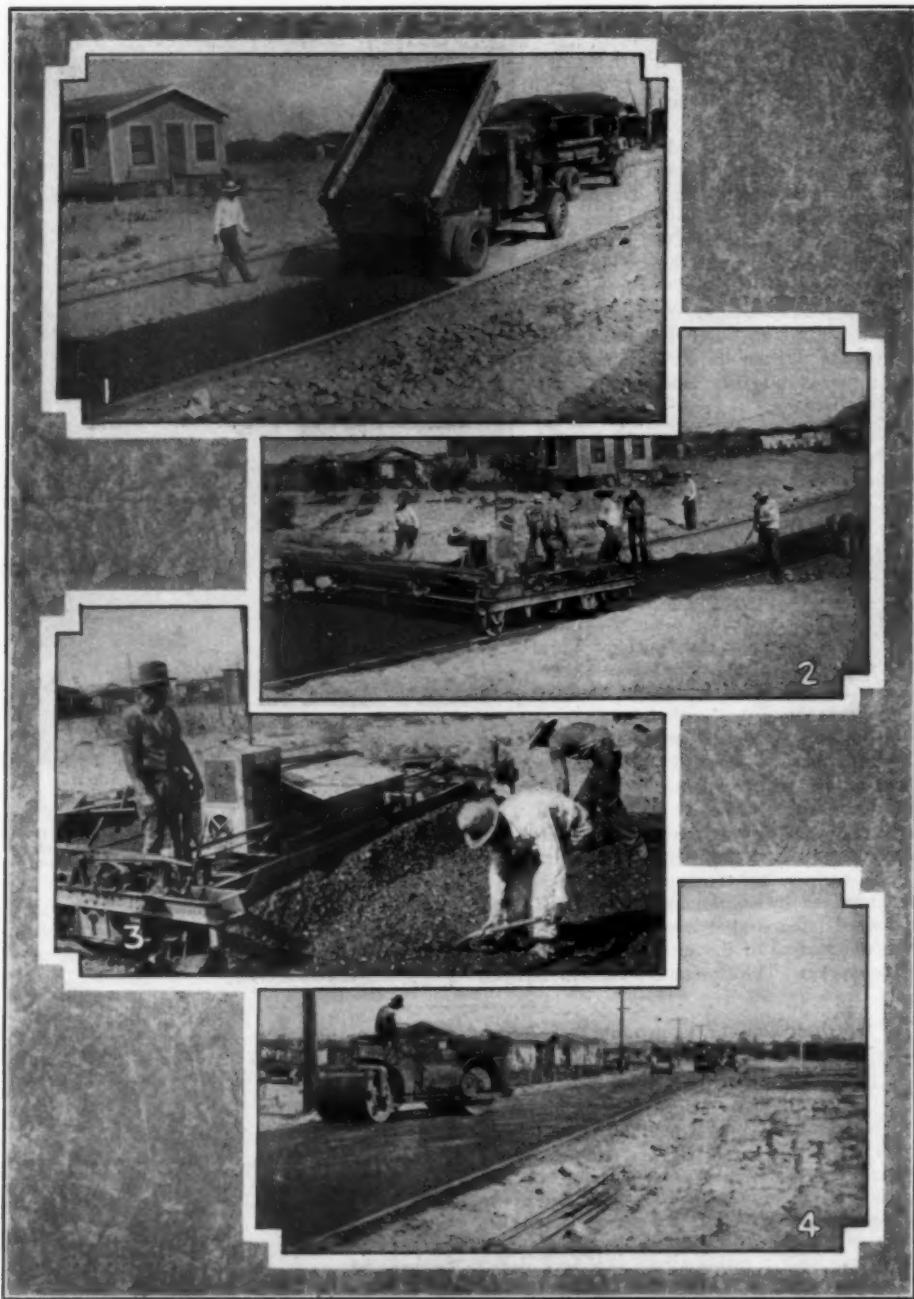
The retention of the same management and corps of workers insures maintenance of the high quality

of products and rigid standards of service for which each of the old companies has won recognition. J. W. Gardner is Chairman of the Board of Directors and W. H. Leonard, President.

#### Littleford Sales and Distributors

LITTLEFORD BROTHERS, 485 East Pearl Street, Cincinnati, Ohio, has reported that the Browning-Ferris Machinery Co., Dallas, Texas, has received an order from the State Highway Department of Texas for 50 Littleford rubber-tired Trail-O-Heaters with hand-spraying attachment, capacity 300 gallons, for use in the Maintenance Department.

The W. M. Pattison Supply Co., Cleveland, Ohio, has been appointed Littleford distributor in the Cleveland territory and the Banks-Miller Supply Co., Huntington, W. Va., is representing Littleford in that state.

**EQUIPMENT USED ON CALIFORNIA ASPHALT ROAD JOB**

- 1.—Spreading base course from truck. 2.—Concrete finisher spreading asphaltic concrete. 3.—Front view of machine showing blade working material into place. 4.—Rolling the finished surface

## Mechanical Spreading of Asphalt

*California Contractor Saves Time of One Raking Gang by Use of Mechanical Equipment*

THE spreading or raking of asphaltic concrete had always been done by hand until the Griffith Paving Co., of Los Angeles in conjunction with the Raymond G. Osborne Testing Laboratories, Los Angeles, Calif., decided to try to adapt their concrete finisher to asphalt work. This was done successfully.

The work illustrated in the photographs on the opposite page was a contract constructed by the Griffith Paving Co., at Placentia, Orange County, Calif., under direction of Nat Neff, County Highway Engineer, A. P. Kendig of the Raymond G. Osborne Laboratories and S. B. McCulloch, engineer in charge of field work. The job consisted of 16 miles of 18-foot, 2-course asphaltic concrete, 2½-inch and 3½-inch base course and 1½-inch top course, with a seal coat covered with chips. A 6-inch subbase of decomposed granite was first laid, using 3-inch wood forms. The height of the forms above the subbase was made to equal the thickness of the asphalt base course.

Before starting the work it was necessary to determine the amount of compression of the base course under rolling. This on a 3½-inch base was found to be ¾-inch. To allow for this compression a ¾ x 3-inch strip of wood was tacked to the top of the forms. When laying the top course, three strips, 1½ x 3 inches x 20 feet were tacked to the form on each side with sections of ¾ x 3-inch flat iron

laid on top to allow for compression on the top course. These iron strips had ears or legs welded on each side to prevent them from being forced off the form by the screed. As fast as asphalt was spread and screeded by the finishing machine, these strips were removed and laid ahead.

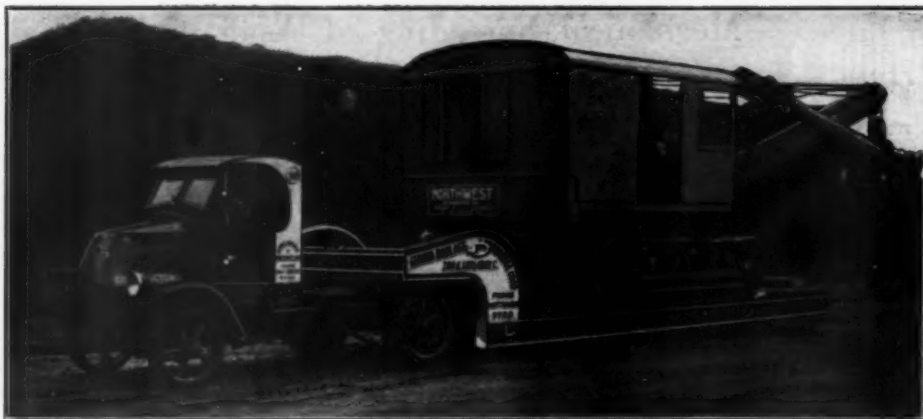
Some of the interesting results obtained by the use of the finishing machine on this job for spreading and raking were the elimination of shadow spots in the finished pavement, a very small amount of segregation of the mix while laying and screeding, eliminating working of the stone to the top as in hand raking. The thorough compacting resulting from the screed action reduced the rolling materially. It was possible to secure a very true crown with a riding quality comparable to the best of concrete roads. It was also noted that the finer the aggregate the better the results obtained. No trouble was experienced in keeping the screed hot as it was never removed from the slab and before starting in the morning it was thoroughly oiled.

The Griffith Co. on this job installed an organization which they estimated would complete the job in five months. By using mechanical spreading they reduced the time to three months with the same organization. It is reported that the mechanical screed saved the time of one raking gang or about \$42.50 a day.



AN INTERESTING RIG FOR DRIVING PILES ON STEEP SLOPE ON A JOB INVOLVING CONSTRUCTION OF BENTS ON A HILLSIDE TO CARRY CONVEYOR SYSTEM





A ROGERS BROTHERS TRAILER SOLD BY HUBBARD & FLOYD, NEW YORK CITY, TO THE GEROSA HAULAGE AND WAREHOUSE CORPORATION, NEW YORK, HAULING A NORTHWEST SHOVEL TO A JOB IN THE BOROUGH OF BRONX

## Rock Tunneling and Excavating Without Explosives

*Use of Pneumatic Rotary Tunnel Machine Opens New Field for Contractors*

**C**UTTING by chisel and hammer, which experience has shown is the efficient method of working through rock, is employed by the App pneumatic rotary tunneling machine made by the App Tunneling Machine Co., Inc., 1 Madison Avenue, New York. With this machine the powerful pneumatic hammers compare with the hand hammer and chisel as the modern steam shovel compares with the hand shovel. Eighteen or more powerful pneumatic hammers are assembled on the head of the machine. With an air pressure of 80 to 100 pounds per square inch, the hammers strike 500 or more blows a minute with a force of approximately 1 to 50 tons to each blow. The machine works automatically, cutting and loading at the same time.

The carriage of the machine consists of two parts, the front and rear halves, through both of which the main shaft extends. The front carries the revolving head which is moved forward one, two or three inches per revolution of the shaft. After the head has advanced five feet the feed screws are reversed and the rear section is moved forward to a new starting position. The main shaft which rotates the head is 12 inches in diameter and 20 feet long and extends the full length of the machine, connecting the front and rear portions.

The head of the machine or tool carrier comprises a hub and three arms equally spaced apart. The arms carry the necessary number of hammers and are so arranged that the chisels cut in concentric circles as shown in the illustration.

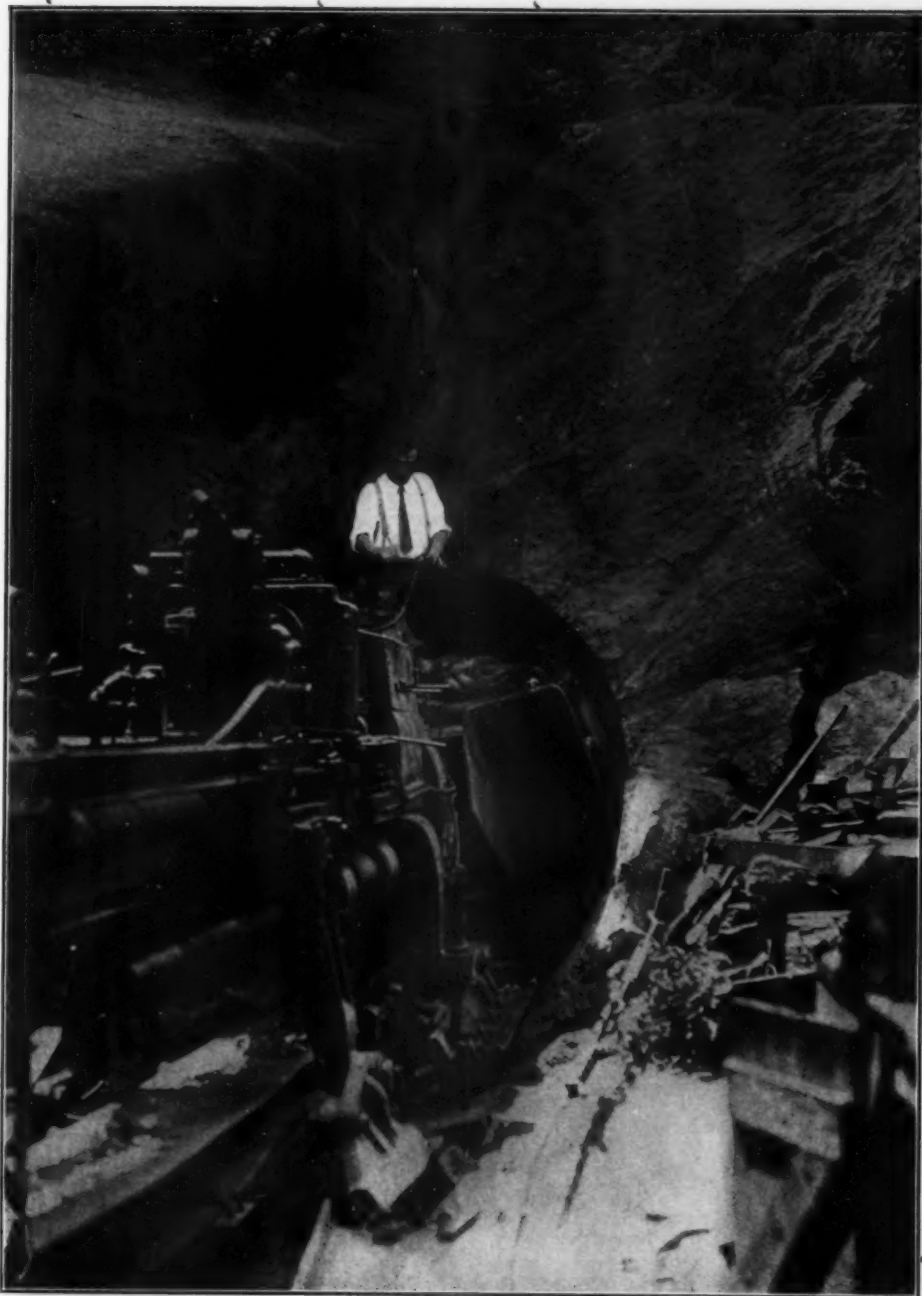
Compressed air is used to operate the head and to manipulate the machine, work the hammers, ad-

vance the machine and reverse the head.

The vital feature of the hammers is the fact that their action is automatically controlled simply and positively by the resistance of the rock or soil itself. The point of control is where the chisel touches the rock. When there is no contact the hammer does not act but the instant the chisel encounters sufficient resistance, the hammer begins to work. Its response is instantaneous. The amount of resistance automatically regulates the force and speed of the hammer action. The harder the rock the more powerful and the more rapidly the blows are delivered. Each hammer acts independently. As the revolving head advances, all the hammers may be working at once or one only may be in action part of the time.

In cutting an 8-foot heading, for connecting the old subway at Fourth Avenue and 42nd Street, to the new Lexington Avenue subway, New York, the possibility of cutting through soft and hard rock to a neat line, thus avoiding excessive removal of material, was well demonstrated. The voids were eliminated, saving concrete and back filling.

Cutting through hard limestone and flat bed rock the machine averages from 2 to 5 feet an hour. Cutting through soft shale and hard clay, the machine averages 5 feet or more per hour. The rate of progress depends on the character of the material through which the machine is cutting. The speed of rotation of the cutting head and the forward feed of the machine is automatically controlled. The head is adjustable for from 6 to 10-foot diameters, depending on the size of the excavation required.



*Keystone Photo*

**APP TUNNELING MACHINE USED BY DEL BALSO CONSTRUCTION CORPORATION ON SUBWAY WORK  
AT 183RD STREET AND FORT WASHINGTON AVENUE, NEW YORK**

## Current Business Conditions

### Analyzing Current Data from the Standpoint of the Contractor

Edited by GEORGE E. MacILWAIN, Business Economist

#### Thirty-Six Best States

**T**HE map shows thirty-six States with business ahead of last year. This leaves but twelve States in the down column. The report indicates a general diffusion of good business that is better by far than peaks in spots, made up for by depressions elsewhere.

Furthermore, I believe that this high ratio will continue. No doubt, some of the States that are now ahead of last year will drop back. But others that have not yet begun to feel the effects of improved buying will come over into the better side of the account and will keep the total high.

The new highs of 1928 will be in the States that have a share in the billion dollars additional coming into the farmers' pockets.

#### Coolidge Still for Economy

Calvin Coolidge may not be a candidate for President in 1927, but he evidently intends to continue his preaching of economy. He will have his hands full with the new Congress. Congressmen have an eye on the pork barrel and they have been muzzled so effectively of late that it is about time to expect a reaction. At the same time, what Coolidge has preached nationally is beginning to seep out to the edges — The States and the Cities. We may see a letting up of Federal economy and an increase

in the economy program in more local Government programs.

If it turns out this way, the areas principally affected will be the ones that have been spending money freely in recent years. The farmers will launch out this next year. Look to these States for the biggest new business programs, so far as public works go.

#### Commodity Prices Change Direction

Prices for commodities have taken a turn upward. Do not be misled by this fact. The present up-shoot is but an episode in the long swing tendency downward. It is largely the result of higher prices for farm products. It will probably be checked before we go far into 1928. You may trust the farmers who get high prices for this year's products to plant all the land in sight next spring! Farm prices will be lower next year and it is my belief that, by May, we shall see the price line again take its downward tendency.

The United Business Service, in its latest Bulletin, lists the following changes in prices of materials used by Contractors:

*Lower prices on:* Brick, Soft Coal, Crude Oil.

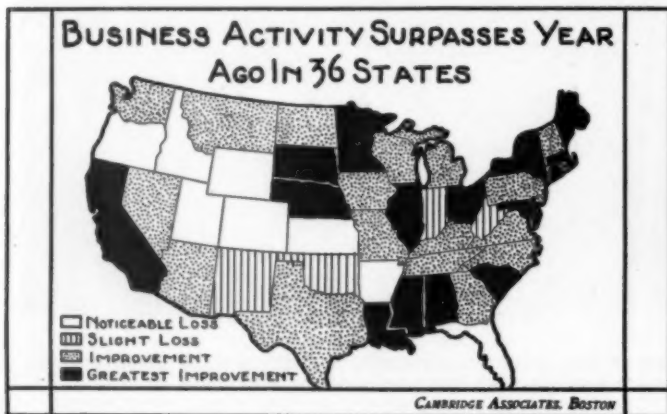
*Level prices on:* Cement, Hard and Soft Lumber, Copper.

*Higher prices on:* Steel bars, Nails, Scrap, Sheets, Wire, Pig Iron, Hard Coal.

#### The Best Cities

Babson lists the principal cities of the United States from the standpoint of expected sales in percentages of last year's monthly figures.

Through December, he gives the following cities with selling expectancy running 100 per cent, or more, as compared with the same month last year: Akron



Albany, Albuquerque, Altoona, Augusta, Ga., Baltimore, Bangor, Bartlesville, Okla., Beaumont, Tex., Berkeley, Calif., Billings, Binghamton, Boise, Boston, Bridgeport, Cedar Rapids, Charleston, S. C., Charlotte, N. C., Chattanooga, Chicago, Cincinnati, Cleveland, Columbia, S. C., Columbus, O., Dallas, Davenport, Dayton, Decatur, Des Moines, Dubuque, Erie, Evansville, Fall River, Flint,

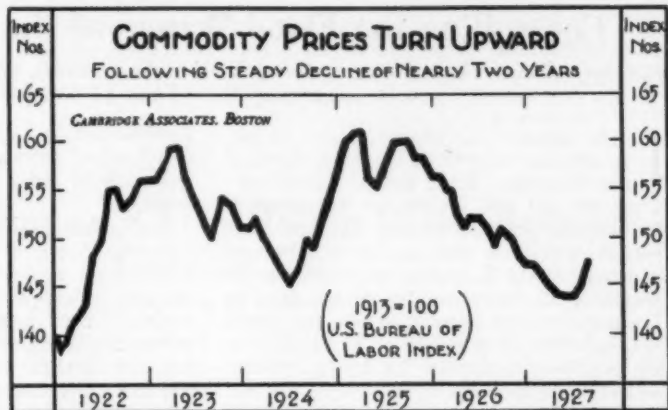
Fort Wayne, Fresno, Galveston, Greensburg, Pa., Hartford, Holyoke, Houston, Kalamazoo, Long Beach, Cal., Milwaukee, Mobile, Newark, N. J., New Bedford, New Haven, Pasadena, Passaic, Philadelphia, Pittsburgh, Portland, Me., Providence, Pueblo, Quincy, Ill., Reno, Rochester, N. Y., Rockford, Sacramento, St. Paul, San Antonio, San Francisco, Savannah, Springfield, Mass., Syracuse, Toledo, Topeka, Trenton, Waco, Waterbury, Waterloo, Ia., Wheeling, Williamsport, Wilmington, Del., Winona, Worcester, Youngstown.

In a good many cases the percentage figures run very much above 100 per cent, as compared with last year at the same time. And in most cases the cities stand for prosperity in their own district. When money in increased volume is circulating in any district, all business is favorably affected. A study of the above list will indicate favorable sections.

#### Lower Interest Rates on Mortgages

On everything except real estate mortgages interest rates are low. There is nothing accidental or temporary about this. Aside from seasonal fluctuations, such as the present, when money rates stiffen for perfectly natural causes, the tendency of money rates is downward. Our cities are now borrowing money for  $3\frac{1}{2}$  per cent, if they are well located and have a favorable tradition. And I am of the opinion that before the oldest of us die, we shall see these same cities borrowing for 3 per cent!

There is no place in the United States where the conservative investor can buy bonds, of the highest quality, to yield much over 5 per cent. This is why so much money is going abroad. But even in foreign lands efforts will be made to refund at lower rates as interest rates decline all over the world.



Most of the contracts for public works are based on bond issues, and have already felt the effect of present tendencies. For such, it is to be noted that there is nothing in sight to alter this condition. But where mortgages are concerned, the pressure to lower rates will be evident. The banks can not maintain 6 per cent with so many insurance companies and private lenders anxious to get  $5\frac{1}{2}$  per cent, or 5 per cent for their money.

#### Keep an Eye on Ontario

Ever since the war taxes have been very high in Canada. Moreover, commodity prices have not had the downward tendency manifested in the United States. With these two handicaps, Canadian exchange has come back to par and, at times of late, has been above par. Canada has been fundamentally sound and the large flow of our money to Canada shows our faith in her basic conditions.

Ontario is going to be prosperous and such of our Contractors as are in a position to take Canadian contracts, will find that there will be much important construction in Ontario in the next few years. 1928 will show a large increase over 1927.

#### Peck Elected Vice-President

THE Thew Shovel Co., Lorain, Ohio, has announced that Frank A. Peck, who for a number of years has been a Director of the company, was recently elected Vice-president. He has been associated with the crane and shovel industry for over thirty years, being at the present time Vice-president of the Universal Crane Co., Cleveland, Ohio, which position he will retain as both companies are closely affiliated.

## Controlling the Flood Waters of the Mississippi

*Interlock Wood Sheet Piling is Being Used in Engineering Project That Will Involve an Investment of More Than \$400,000,000*

**I**N the gigantic engineering project of harnessing and controlling the flood waters of the Mississippi River and its tributaries—a project that will involve an investment of \$400,000,000 or \$500,000,000, it seems from present indications that lumber will be used to a large extent in keeping the promise to the people of the lower parishes of the State of Louisiana that the calamity of this year which Secretary Hoover described as “the greatest in the peacetime history of the United States,” will never be repeated.

Government executives and engineers, carefully investigating materials with which the most modern and durable levees can be constructed, have exercised extreme care to use only the best and most durable of materials. The Caernarvon gap, which saved the city of New Orleans from being inundated, is now closed. Started on July 17, this job was finished by August 24. The speed thus achieved was made possible by the use of an interlocking wood sheet piling made of southern pine.

Investigation has shown that only three different and widely divergent materials can be used for this kind of work—lumber, concrete and steel. From all viewpoints, the most satisfactory material is lumber piling, preferably of a design that interlocks and prevents the seepage of water. Engineers and experienced levee builders, at a special meeting of the Or-

disadvantageous, since the digging of the trench would materially weaken the long settled embankments and sloughing and caving would result.

The possibility of concrete slabs was also rejected. A pile driver could not be used to install them without water jetting to loosen the soil. Moreover, the nature of the slabs prevented them from being driven accurately so that they might be joined on the edges. The resultant seepage would make the walls useless and the excessive weight of the material would be an added hazard to the already loaded banks—a weight which is intensified through saturation.

Steel also proved unsuitable for this operation. Initially, the cost of sheet steel was prohibitive. It was conceded that steel plate piling permits a reasonably good interlock.

The first piece of Martinez interlock wood sheet piling that was ever used competed with steel plate at the Fairfield Levee (4th Levee District) in 1914. The alignment of the wooden article was perfect, being provided with grooves and jaws, which permitted it to drive accurately and smoothly in place. A unit can be swung to the end of a derrick without being braced or supported by leads, and driven cleanly into the soil. In addition to lacking these desirable qualities, the steel plate piling was not equal to the resistance of



UPPER  
END OF THE  
CAERNARVON CREVASSE  
WHICH SAVED THE  
CITY OF  
NEW ORLEANS  
FROM INUNDATION  
DURING THE  
MISSISSIPPI RIVER  
FLOOD

The  
interlocking wood sheet  
piling was floated up to the  
framework visible  
in the photograph  
and driven

leans Levee Board in New Orleans, some time ago, disapproved of suggestions to install concrete walls through levees and embankments likely to be affected by the high waters of the Mississippi. It was decided that in order to put in a solid concrete core wall, trenches would have to be dug through the levee to low water line before the concrete material could be poured. A core of this nature would prove

the soil and failed to drive for less than 50 feet. As a result, over 850 feet of bulkhead of the interlocking wood sheet piling was used at Fairfield and the steel plate piling rejected.

This closing of the Caernarvon gap was proof that the State Board of Engineers, the Orleans Levee Board and the City of New Orleans were sincere in their promises that property would again be made safe as soon as



the flood heights of water were lowered at New Orleans. The job was completed in 39 calendar days, was over 4,000 feet long and consumed more than 1,000,000 feet of interlock piling.

This material has been used recently on other large projects, among them being: on the sea-wall at Stuart, Florida; the 1,700-foot sea-wall

of the Frisco System at Pensacola, Florida and the New Orleans New Basin Canal. More than 5,000,000 feet of the interlocking piling were used in the construction of the Industrial Canal Locks at New Orleans and approximately 100,000,000 feet of it were used in the vicinity of the city during recent years for various purposes.

## Earth Handling on a Five Million Dollar Railroad Terminal Job

### Trucking Equipment Saves the Day

THE utility of motor trucks in excavation and earth handling, efficiently performing a task originally planned for handling by an industrial railroad, has been dem-

onstrated in the building of the \$5,000,000

and the job was completed in September. The contract for removing the dirt and laying the tracks was given to the D. A. Foley Construction Co. of Los Angeles, whose or-

BUCYRUS  
SHOVEL WITH  
CRAWLER EQUIPMENT  
LOADING  
WHITE 3½-TON  
TRUCK  
ON FORT WORTH,  
TEXAS,  
JOB



onstrated in the building of the \$5,000,000 railroad freight terminal by the Texas and Pacific Railway just outside of Fort Worth, Texas. When completed, the terminal will be one of the largest and most modern in the Southwest, covering an area 5 miles long and half a mile wide. A million cubic yards of earth are to be moved, 800,000 of which will be handled by 13 White dump trucks operated by C. H. Foley of Wichita Falls, Texas. The work was started in March, 1927, with three White 3½-ton trucks and progressed so rapidly that ten more trucks of similar capacity and make were purchased and put to work in April

iginal plan was to sublet the moving of 80,000 yards to a trucking contractor, the balance to be removed by industrial railway. The truck operation did the work so quickly and efficiently that the construction company gave Foley a contract to remove 720,000 additional yards, the only part of the work left for the industrial railroad being 200,000 yards of rock.

The fleet of trucks moved an average of more than 100,000 yards of earth per month with a record haul of 160,000 yards during July. The longest haul was about a mile and the shortest was a few hundred feet, the trucks keeping pace with three steam shovels.

### Pacific Coast Distributor

ARTHUR F. KING, Arthur F. King Co., has taken over the sale of the products of the Osgood Co., Marion, Ohio, and the General Excavator Co., Marion, Ohio, for the Pacific Coast section. Mr. King, who recently resigned as Director of Sales for Marion Steam Shovel Co., is located at the chief operating office of Arthur F.

King Co., 85 Second St., San Francisco. Distribution will be established in all the chief cities of California, Oregon, Washington, British Columbia, Arizona, Nevada, Idaho and Montana. Ample repair stocks are to be carried in convenient points so that users of Osgood shovels and General Excavator equipment can obtain service quickly.

## Legal Points for Contractors

*These brief abstracts of court decisions in the contracting fields may aid you in avoiding legal difficulties. Local ordinances or state laws may alter the conditions in your community. If in doubt, consult your own lawyer*

Edited by A. L. H. Street, Attorney-at-Law

### Substantial Change in Plans and Specifications Invalidates Public Contract

Custard pie would be as hard as concrete in comparison in the "softness" that would result to favorite bidders for public work, if the law would permit the awarding authorities to advertise for bids on one set of plans and specifications and make an award on another set more favorable to the contractor.

That is why the Mississippi Supreme Court set aside a contract to build a sea wall in the case of Board of Supervisors vs. Cooper, 112 Southern Reporter, 682, decided May 16, 1927, although it is not intimated that any favoritism was actually intended in this case. It is the tendency that such practice has to encourage favoritism, rather than the fact whether or not it actually resulted in a given instance, that invalidates it.

Changing specifications in matters pertaining to storm hazards and the damages to be paid for delayed performance was held to be so substantial as to render invalid an award made without readvertising for bids under the revised specifications. The court said:

"The evidence showed that probably the county was benefited instead of harmed by the method adopted by the road inspection commission and board of supervisors. Nevertheless, the courts cannot write out of a statute, in order to save one particular, meritorious case, language declaring a wholesome public policy."

### Decision on Contractor's Bond Favors Materialmen

The city of Sumter, South Carolina, let a paving contract, taking a bond securing performance of all the terms of the contract.

Litigation arose as to whether or not a company that furnished materials to the contractor had a right to sue on the bond. In an opinion filed April 21, 1927, the South Carolina Supreme Court decided, in the case of Standard Oil Co. vs. Powell Paving & Contracting Co., 1328 South Eastern Reporter, 184, that the bond was available to the material company. The court adopts the following reasoning of the trial court, concerning the interest of a city, or other public corporation, in taking a bond that protects materialmen:

"There is even greater need of protection for materialmen than for laborers. Labor is paid at short intervals, and, in case of tardy payment, can discontinue work and avoid any large loss. Materials, on the contrary, are, on extensive projects, furnished in large quantities. Single shipments may

run into thousands of dollars in value, and the chance of heavy loss is ever present. The existence of protection in the shape of a bond or other security must inure to the benefit of the city, in the prevention of delays due to doubts as to the solvency of the contractor.

"The concern of the city in freedom of its public improvements from the cloud of unpaid claims is greater in reference to material claims than to labor, because the former are likely to be much larger."

### Unsigned Contract Was Valid

Where a proper written proposal to build a county bridge was accepted and a contract conforming to the terms of such accepted proposal was filed, oversight consisting in omission to have the contract signed did not invalidate the agreement, held the Arkansas Supreme Court in the case of Shroll vs. Newton County, 295 South Western Reporter, 1, decided June 20, 1927.

### There Is No "Competitive Bidding" Where Bids Vary as to Time for Performance of Public Contract

The Oklahoma State Highway Commission invited proposals as to the price and time for constructing a bridge. Several bids were received varying as to prices and times. Plaintiff's bid was accepted as being the lowest, because it specified the shortest time, although the amount bid was higher than some of the other proposals.

In an opinion handed down June 21, 1927, the Oklahoma Supreme Court held (Flynn Construction Co. vs. Leininger, 257 Pacific Reporter, 374) that there was a violation of the statute requiring competitive bidding; that "competitive bidding" requires bids based on the same terms. But for the following stated reasons the court refused to annul the particular contract:

"Plaintiff's contract was entered into in good faith under a departmental construction, which had been in force for a substantial period of time, and under which numerous other contracts had been made and carried out without question as to their validity, and plaintiffs have faithfully complied with every requirement of their contract. The major per cent of the work specified has already been completed at a cost to plaintiffs of many thousand dollars for labor and material. To nullify and set aside such contract at this advanced state of completion would be a manifest injustice to plaintiffs and an inevitable loss to the state and inconvenience to the public."

### Risks of Agreeing to "Satisfy" the Owner or His Superintendent

"The work included in this contract is to be done under the direction and to the satisfaction of the general superintendent of mines," read one of the articles of an agreement for the construction of 175 workmen's houses. It was a cost-plus contract. The superintendent failed to be satisfied and the case of *Thompson-Starrett Co. vs. La Belle Iron Works*, 17 Federal Reporter, 2d Series, 536, resulted.

Disposing of the controversy in an opinion handed down February 14, 1927, the United States Circuit Court of Appeals, Second Circuit, said, in part:

"It is quite true that such contracts are hazardous, but we must construe them so as to give that protection which on their face they seem intended to secure.

"Therefore we should hold, if the facts required it, that the phrase 'the work \* \* \* is to be done under the direction and to the satisfaction' of the superintendent required the plaintiff [the contracting company] to satisfy him, not only that it performed its covenant in the seventh article that 'all material and workmanship delivered under this agreement shall be strictly in accordance with the plans and specifications,' but that it also performed its covenant in the first 'to erect and construct said buildings \* \* \* at the lowest cost consistent with good workmanship and the quality of materials contracted for.' \* \* \*

"The question presented by such a provision, both under federal decisions and those of Pennsylvania, the place of performance, is whether the promisor was in fact satisfied with the performance, and not whether he ought to have been."

The opinion also recognizes that the mere fact that the superintendent may be shown to have been self-willed and prejudiced will not establish that his expression of dissatisfaction was not in good faith, where it appears that there were defects in the work.

It is also noted that owner's superintendents are not to be expected to be impartial, though honesty is to be expected.

### How Soon Is "Immediate" Delivery of Materials?

Holding that a dealer in brick was liable for non-delivery of brick sold for use in constructing a particular building, the Kentucky Court of Appeals remarked in the case of *Fischer Lime & Cement Co. vs. Hearne*, 295 South Western Reporter, 1012, decided June 24, 1927:

"The plaintiff sold the defendant the brick for immediate delivery. It did not deliver the brick, and it was no excuse for it that the factory did not have any more brick. There was no provision in the contract exempting it from liability if unable to get the brick. The plaintiff made a positive contract with the defendant to sell and deliver him

the brick. It was the defendant's [plaintiff's] duty under this contract for immediate delivery, to deliver the brick in a reasonable time. A reasonable time in such a case is such a length of time as by ordinary care and diligence, and in the ordinary course of business, the bricks might have been shipped and delivered."

### Damage Awards Must Have Definite Bases

"A freshet has washed out the Ninth street bridge and we invite bids for its replacement according to the plans and specifications," said the City of Alpena to the world.

"I will do the job at a low price and under low speed or at a high price under high speed," offered the Wisconsin Bridge & Iron Co. "In other words, for this structural steel job, it will cost you 8.29 cents per pound if we rush the job to completion by about April 3. If you can detain your steeds until June 1st, the job will cost you only 7.83 cents."

"Our people don't want to have to wade across the river any longer than they have to," rejoined the city; "so we will pay the higher price."

The contract was closed without anything being said about the amount of damages that should be paid in case the contractor should be late in completing the job.

The work was not finished until nearly six weeks after completion of the slow job would have been due. And because the city and the contractor could not see things in the same light, it was impossible for them to adjust the balance due the contractor. The company sued and lost in the trial court, but the Michigan Supreme Court ordered a new trial on the ground that the trial judge erred in holding that the city was entitled to a settlement on the basis of what it would have cost had the lower bid for slow work been accepted. The high spots of the higher court's opinion are as follows:

This was a case where no actual damage was or could be shown to have resulted to the city. Hence it would have been proper for the agreement to have stipulated the payment of a certain sum as liquidated damages. "Inconvenience to the public in being deprived of the use of the bridge cannot be measured in damages, although it may be a subject of agreed diminution of pay for such a public work."

It probably would have been permissible to have specified in the agreement that the amount of the bid for slow work should be the price paid unless a fast job should be done, but such basis for fixing damages for delayed performance, not having been agreed upon by the parties, cannot be applied by the courts. "The contract provided for no such measure, and the law leaves the city the right to recoup no more than actual damages. The difference between the two bids, in price and point of time for performing, might indicate clearly the desire to have the bridge quickly, but measures no actual damages." (*Wisconsin Bridge & Iron Co. vs. City of Alpena*, 213 North Western Reporter, 93, decided April 1, 1927.)

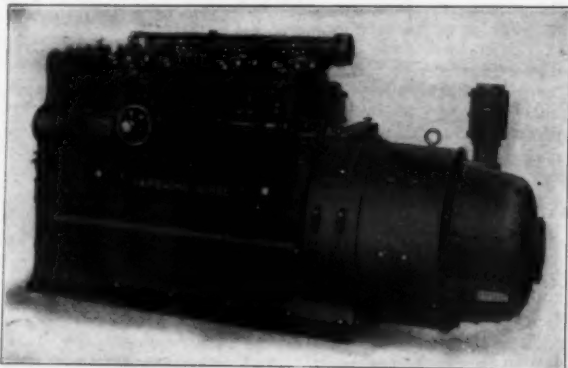
## Higher Speed and Lighter Weight Diesel Engines

*Simplicity and Low Fuel Cost of Diesels Make Appeal to Contractors*

**W**ITH the field of application of diesel engines for heavy construction work rapidly widening, several important developments have appeared recently in connection with the larger sizes that have demonstrated that the diesel engine will produce a horsepower hour with a fuel and lubricating oil cost of approximately one-half cent or a kilowatt hour for approximately three-quarters of a cent. With labor and other charges added the total power cost seldom is more than 1½ cents per kilowatt hour.

This new trend in the power field has been studied by Fairbanks, Morse & Co., Chicago, Ill., which has developed a line of higher speed and lighter weight diesels in ratings from 30 to 180 horsepower. In these engines the fuel oil is injected into the combustion space above the cylinder proper by means of a plunger pump which is driven by a cam mounted on a shaft running along the side of the engine about half way up. This shaft is driven by means of gears from the main crank shaft. One of these plunger pumps is required for each cylinder. The fuel is sprayed through a nozzle located at the top of the cylinder and the injection of the fuel is timed so that it enters the combustion chamber at about the time the piston reaches the top of its stroke.

By igniting the charge of fuel oil by the heat of compression the pressure of the air at the top of the cylinder when the piston is in its highest position is about 500 pounds per square inch, while in the gasoline engine this pressure is about 50 pounds per square inch. When the air is suddenly



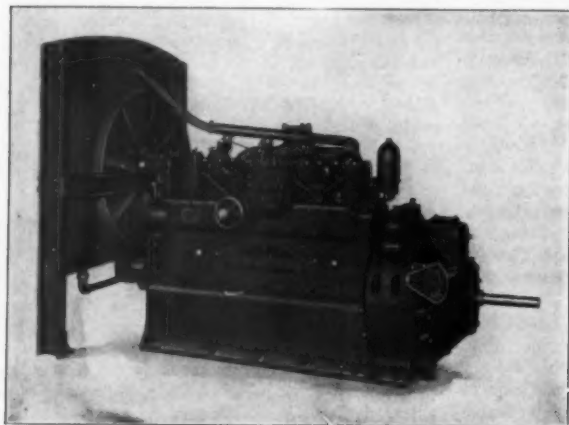
A 40 KW. DIRECT CURRENT DIESEL ENGINE GENERATING SET

compressed to 500 pounds the temperature rises to approximately 1000 degrees Fahrenheit, the fuel is ignited and the burning gases expand out into the cylinder, driving the piston down, the action being more like that of steam in a steam engine, since the combustion is not rapid as in the case of the gasoline engine and there is no explosive action, but rather a slow burning of the fuel.

Low fuel cost is a big feature of the diesel that appeals to contractors. The high compression type of diesel will burn very low grades of fuel and will burn them more efficiently than the lower compression or semi-diesel types. The higher the compression, the higher the generating temperature and hence the more complete is the burning of the fuel.

The engines of Fairbanks, Morse & Co. are built in a number of modifications to meet practically every service requirement in the construction field. They can be equipped with radiator cooling and with a built-in clutch of the automobile type for such applications as dredges, power shovels, locomotive type cranes, etc. This same type of unit can also be equipped with a pulley and used for conveyor drives or any application where it is desired to use a belt drive. Since the speed of units of this type matches up with many types of driven machinery such as centrifugal or screw pumps, it is also possible to directly connect this type of engine to the driven machinery.

In some cases these engines equipped with radiator cooling have been mounted on skids together with the necessary fuel and air tanks, switchboard and other small auxiliaries to make a semi-portable type



A 60-HORSEPOWER, 800 R.P.M. DIESEL WITH RADIATOR COOLING FOR USE WITH EXCAVATING EQUIPMENT



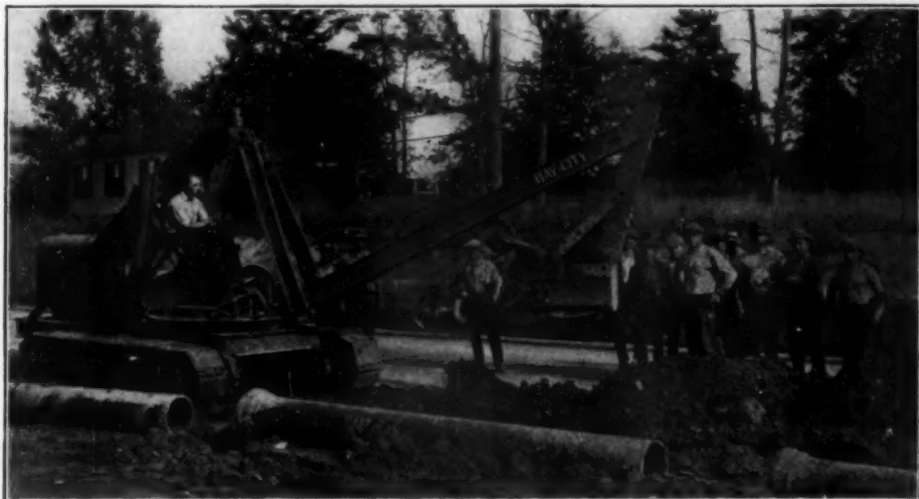
power plant for use in construction operations and similar service.

Another modification of the unit is the direct connection of a small alternating current generator with direct connected exciter. This is the first time that a full diesel engine alternating current generating set has been available in sizes as small as 36 kilowatt. Since this small engine is just as efficient as the large diesel engine, the small generating set makes it possible for the power user who has a comparatively small load to get the same economy as the largest users of power. Since this diesel engine is a self-contained unit its installation is as simple as that of a gasoline engine.

Where direct current is desired these engines are equipped with a ball-bearing direct current generator. The resulting unit is very compact as shown by the fact that a 40-kilowatt generating

set of this type requires a floor space of only 2 feet 9 inches x 8 feet 1½ inches. The lubricating system is entirely automatic.

These new types of diesels are equipped with both manual and governor control. In this control a half turn of the small regulator will vary the speed through a wide range. Where the engine is to be operated for long periods at a slow speed the governor control wheel is turned and the engine operates at this slow speed under governor control. This feature is exceptionally important where the engine is used for such service as a power shovel, but it is also useful in varying the voltage or frequency on direct and alternating current generating sets. The engines are started with compressed air at a pressure of about 250 pounds which is supplied by a small air compressor and stored in small tanks.



A BAY CITY TRACTOR SHOVEL DIGGING A WATER MAIN TRENCH ON Hylan Boulevard, Staten Island, N. Y.

This tractor shovel equipped with an 18-inch trench bucket is working handling excavation for a 12-inch cast iron water main. The general contract is held by Knight and Demico of New York City, and the excavation is being handled under sub-contract by Isanti Brothers, Staten Island, N. Y., owners of the machine. The Bay City tractor shovel has handled this work effectively and rapidly. The trench ranges from 20 to 24 inches wide and 4½ feet deep. On some days the machine has handled as high as 600 feet of trench in 9 hours. The average on the job is 500 feet of trench per 9-hour day.

#### Hazard Wire Rope Company Formed

**A** NNOUNCEMENT is made that the Hazard Manufacturing Co., Wilkes-Barre, Pa., is dividing its two distinct lines of business and forming two companies for the manufacture and sale of its products. The present corporate name will be retained for the company manufacturing insulated wires and cable, and a corporation chartered in Pennsylvania as the Hazard Wire Rope Co. will take over the manufacture and sale of wire rope. The present management of the old company is retained by both companies and each will finance its own commitments, take care of contracts and render the same excellent service.

#### Trackson Distributor

**T**HE Trackson Co., 519 Clinton Street, Milwaukee, Wis., has announced the appointment of the Allen Equipment Co., 331 South Rio Grande Avenue, Salt Lake City, Utah, as distributor in the Salt Lake territory for Trackson Full-Crawlers. Both the Standard Model F and the heavy-duty model D Trackson Full-Crawlers will be handled by this new distributor with a complete stock of repair and replacement parts. Service is an important part of the policy of the Allen Equipment Co. so that users of this equipment will be assured of prompt and efficient service on their orders.



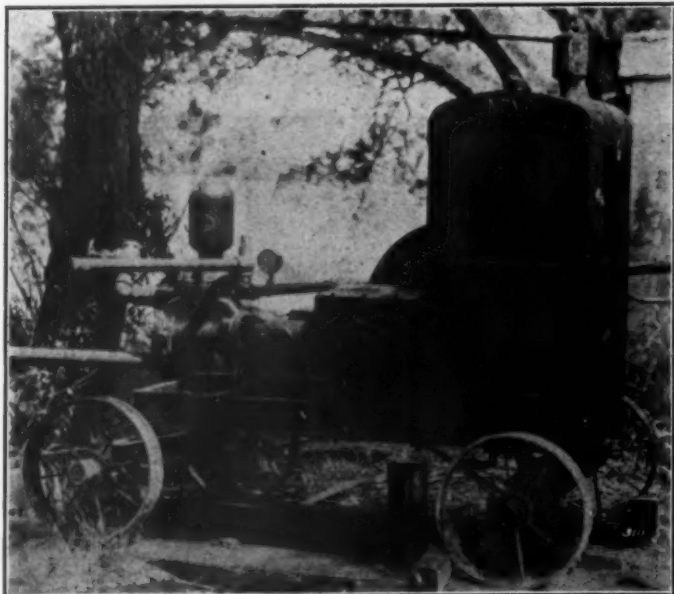
## Road Builders' Pumps with New Oiling System

*Will Operate at Various Pressures Up to 425 Pounds*

**A** DUPLEX, double acting piston pump, Type "EW," with a new, automatic, simple and foolproof oiling system is being developed by the Novo Engine Co., Lansing, Mich. By using this Flud Oil pump, labor costs are reduced since it is unnecessary to provide a constant attendant. With proper attention to the power unit and a sufficient quantity of the proper oil in the pump crankcase, this pump will operate in isolated places with but little attention. This method of lubrica-

tion lengthens the life of the equipment, reduces repairs and eliminates shut-downs. The pump unit is built in several sizes with capacities of from 35 to 110 gallons per minute. Gasoline driven units are regularly furnished mounted on welded steel trucks. Electric or belt-driven units are regularly furnished on skids. The unit operates at various pressures up to 425 pounds, making the pump particularly suited for road builders' requirements. The pump cylinder block is a one-piece casting with suction and discharge. Brass cylinder linings are easily replaced—a chisel and ball-peen hammer being the only tools required. The pump crank-

shaft is a heavy steel casting with an integral flange midway between the bearings. This flange carries the gear, which is machine cut from a semi-steel blank. The gear is fastened to the crankshaft flange by means of six bolts, effecting strong construction and doing away entirely with keys, set screws, etc., and allowing for ready renewal of the gear. The driving pinion on the pump shaft is machine cut from a solid steel blank and is keyed to the shaft.



A NOVO  
FLUD OIL DUPLEX  
DOUBLE  
ACTING ROAD PUMP  
OWNED BY  
W. T. LANG  
CONSTRUCTION CO.,  
CHICAGO, ILL.,  
BEING USED  
ON A ROAD JOB  
NEAR  
BENTON HARBOR,  
MICH.

tion lengthens the life of the equipment, reduces repairs and eliminates shut-downs.

This pump unit is built in several sizes with capacities of from 35 to 110 gallons per minute. Gasoline driven units are regularly furnished mounted on welded steel trucks. Electric or belt-driven units are regularly furnished on skids. The unit operates at various pressures up to 425 pounds, making the pump particularly suited for road builders' requirements.

The welded steel channel frame forms a light, rigid, non-warpage base to which the engine and pump units are bolted. The crankcase is completely enclosed and oil tight. All openings are sealed with plates and gaskets. A large hand hole on top of the pump permits inspection and adjustment of connecting rod bearings without dismantling the pump.

The pump cylinder block is a one-piece casting with suction and discharge. Brass cylinder linings are easily replaced—a chisel and ball-peen hammer being the only tools required. The pump crank-

The pump pistons are packed with square hydraulic packing and it is necessary, when renewing the packing, only to remove the cylinder head. Hard bronze valves for water are regularly furnished on this pump unit.

The connecting rods are of malleable iron, with heavy H section. Bearings are of high pressure babbitt and adjustable. Intermediate shaft and pump crankshaft bearings are one-piece bronze bushings. Each bushing is pressed into a plate which is bolted to the pump crankcase.

In this duplex, double acting piston pump, the oiling gear is located in the middle of the pump, throwing oil with great force to both sides of the pump crankcase. The connecting rods, being located on either side of the pump crankshaft gear, dip in the oil at the bottom of the pump crankcase during each stroke. As they ascend to the top of the stroke, each receives a flood of oil from the oiling gear. Similarly, deep troughs convey large quantities of oil to bearings, crossheads and pins.

## A New Clamshell Bucket

*Large Capacity, Speed and Dependability Make It Popular for All Types of Excavating*

A NEW clamshell bucket is being produced by the Orton Crane & Shovel Co., 608 So. Dearborn Street, Chicago, Ill., for digging, excavating and handling material such as sand, gravel, stone, etc. It is built in  $\frac{1}{4}$ - to  $1\frac{1}{4}$ -yard capacities.

A wide spread of the scoops, powerful and speedy closing action, clean and smooth inside surfaces afford a rapid discharge. The reinforced scoops are of open hearth steel, amply riveted, and make up the shell of the bucket. The metal is distributed in conformance with the stresses. The straight sides of the bucket are of great advantage when the bucket is cleaning up a car as there is no need of getting down into the corners with a hand shovel. The removable lips of high carbon steel are bolted to the digging edge of the scoops, and the bucket may also be equipped with removable teeth, if desired.

The oversize capacity is one of the features of the bucket. Each size bucket holds the rated capacity at the struck level. Practically all the rivets on the inside are counter-sunk. Removable bronze bushings are used throughout the bucket.

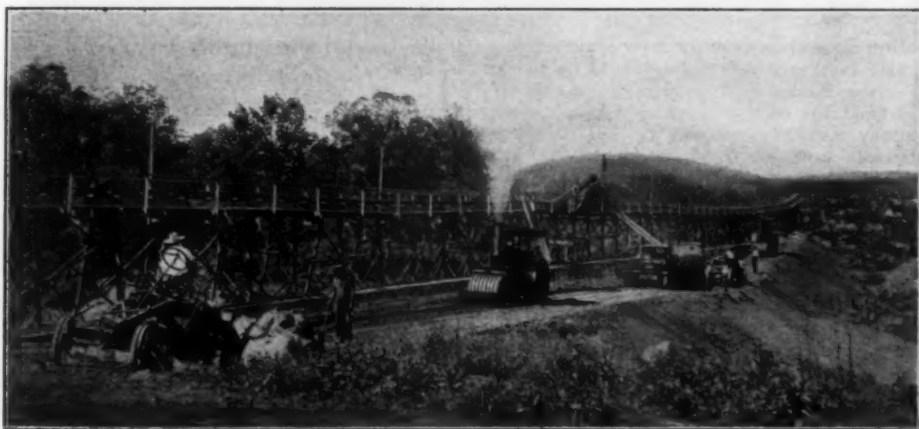
Case hardened wearing blocks that may be replaced when worn, guide the cable and keep it from cutting the top of the bucket. Straight lead sheaves keep the cable in the bottom of the score, and also eliminate the side wear and prolong the life of the cable. Flat braced back arms are of extra heavy section, and both sides are pinned at the top to equalize the wear and prevent lateral distortion.

The main closing shaft is in three sections, and only the center section carrying sheaves needs to be threaded when replacing worn bushings. The interlocking hinges of high grade steel castings,



THE NEW ORTON CLAMSHELL BUCKET

bronze bushed, and riveted to the scoops, eliminate all bending strains in the main closing shaft. Alemite-Zerk fittings at all of the vital wearing points insure the injection of lubricants correctly and positively under high pressure.



PLACING IMPERVIOUS ROLLED EMBANKMENT AT WOLF DEN DAM OF THE WANAUKE PROJECT IN NORTHERN NEW JERSEY BY MEANS OF TRUCKS LOADED FROM BELT CONVEYOR

## A New Line of Hydraulic Jacks

*Oil-Power Lifters in Capacities of 1½ to 75 Tons Require Little Effort to Operate*

**A** LINE of hydraulic jacks, using oil as a lifting medium, in capacities of 1½ to 60 tons, that have few working parts and give positive raising, lowering and holding loads, has been announced by the Blackhawk Manufacturing Co., Milwaukee, Wis. This new type of jack allows operation in cramped places and requires little power and effort in raising the load as the full stroke of the pump is unnecessary and the slightest movement of the pump handle will raise the load.

The pump and ball check are built on the outside of the jack and are easily accessible. The jack does not have to be torn down to get at this ball check unit. The release valve is entirely separate from the pump, preventing accidental lowering and it is positive in action. By turning the release valve the load is automatically lowered as desired and easily controlled. The load can be raised or lowered to within 1/1,000-inch of the desired point.

The jack is provided with a by-pass to prevent the plunger from being raised beyond safe limits. Heavy-duty jacks are equipped with two pumps; one low pressure speed pump to raise the plunger quickly to the point of contact, and one high pressure pump to carry the load. The heaviest jack is light enough to be carried easily by two men, and can be operated horizontally when the pump is on the down side.

These jacks are made of the best material to withstand enormous pressures and packing is especially prepared to prevent leaking and low cold-test oil prevents freezing. The complete line consists of ten models in nine capacities, designed for various purposes. Automotive models embrace single and double lift models, light and heavy duty, low and high built. The industrial models range



THE NEW 18-TON CAPACITY BLACK-HAWK OIL POWER JACK

from 18- to 60-ton capacity and are for lifting jobs of vast tonnage which cannot be handled with ordinary jacks, raising and lowering them easily without loss of time or danger. These models cover low or high lifts and a heavy-duty floor lift jack.

The California Highway Commission used 30-ton hydraulic jacks on a bridge moving job outside of Los Angeles, Calif., placing them in a horizontal position with the pump side down. The bridge weighed 2,093 tons and was moved 13 feet in twelve hours. This 4-span bridge was raised ten inches, loaded on rails, and skidded to the desired place. During the entire process of moving, the bridge was kept open to traffic, and an average of 12,000 cars per day passed over the bridge during the process.

### Galion Branches Occupy New Quarters

**T**HE rapid growth of the business of the Galion Iron Works & Manufacturing Co., Galion, Ohio, has made it necessary for two of the company branches to move into new quarters with increased warehouse facilities. The office and warehouse of the Kansas City branch, R. L. Boston, Manager, is now located at 1205-07 Woodweather Avenue, Kansas City, Mo., in a new building owned by the Galion Co. The branch at Orlando, Fla., D. B. Finley, Manager, has just finished moving into the new building constructed recently for it at 1107-09 Virginia Drive, Orlando, Fla.

Announcement has also been made that the Galion Iron Works and Manufacturing Co. is to construct a new building, 90 x 340 feet in size, of fireproof construction, with steel framing and brick walls for assembling Galion motor graders and leaning wheel E-Z Lift graders and straight wheel graders.

### Belle City Manufacturing Co. Expands

**T**HE Belle City Manufacturing Co., Inc., Racine, Wis., makers of crawler attachments for Fordson tractors, has recently introduced new capital into the company, making it possible to increase production and bring out several new lines of equipment. The new officers recently elected are H. A. Reed, President and General Manager; W. J. Tostevin, Vice-president; G. A. Nelson, Secretary-Treasurer, and H. A. Schultz, Assistant Secretary and Assistant Treasurer.

### New Monarch Distributors

**T**HE Monarch Tractor Corporation, Springfield, Ill., has announced the appointment of two new distributors for Monarch tractors, as follows: Tractor Snow Equipment Co., 66 Broadway, Kendall Square, Cambridge, Mass., and Memphis Tractor Co., 503 South Third Street, Memphis, Tenn.



## Portable Belt Conveyors for Efficient Material Handling

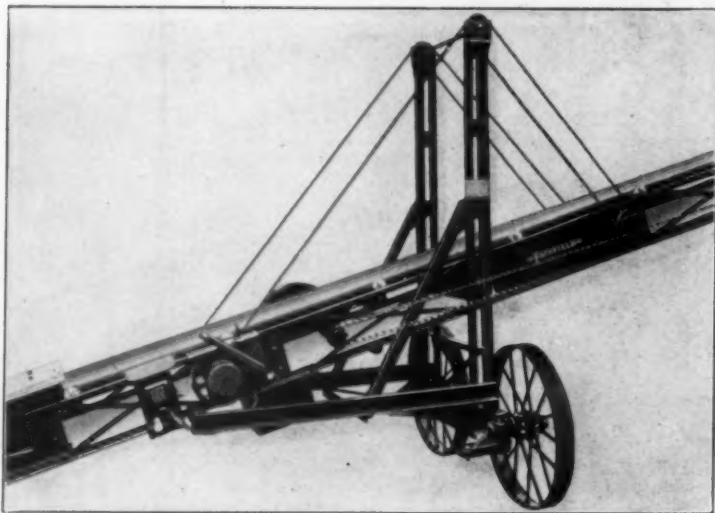
*The Large Quantities of Sand, Gravel and Crushed Stone Carried Save Time and Money*

**B**ELT conveyors that handle easily large quantities of sand, gravel, and crushed stone and other heavy abrasive materials, and that may be moved quickly to any position desired, are manufactured by The Fairfield Engineering Co., Marion, Ohio. They are of structural steel, strong yet reasonably light.

Three-pulley steel troughing idlers with wide rubber covered belt are used on these conveyors, and the power requirements and wear on the belt are minimized, while the capacity of the trough is large. In order to secure ample capacity 20-inch wide belts are standard equipment on conveyors in lengths up to 35 feet, and 24-inch wide

provided with a rubber strip to prevent damage to the belt. A flared receiving hopper of steel construction is also provided to protect the belt and to center the load on the belt. Rubber strips are attached to the edges of the hopper plates so that the belt will not be cut. Three straight steel rollers are mounted 12 inches apart at the foot end to sustain the weight of heavy loading. The inner side of the foot pulley is provided with a steel wiper plate to clean off wet sand between the belt and the pulley.

The frame is open on each side just ahead of this wiper plate, making it easy to remove any accumulation of materials at the foot end. The foot



THE  
FAIRFIELD  
PORTABLE BELT  
CONVEYOR

on longer conveyors, thus insuring ample capacities without the use of sideboards.

Rubber belts with extra heavy rubber covers on the carrying side and an extra ply of canvas around each edge are furnished unless otherwise ordered. The troughing idlers are made of steel and the bearings have renewable bronze bushings and are provided with grease reservoirs and Alemite fittings.

The head pulley is a crowned-face split pulley of pressed steel construction and is mounted in a unit take-up frame. This pulley is easily adjusted for removing slack in the belt by setting up a single adjusting screw on each side. A cast iron foot pulley is used which is also adjustable for alignment.

The steel foot plate is of the pull-out type and can be removed instantly when desired. Its projecting front is fitted closely to the belt and is

shaft is mounted in two babbitt-lined bearing blocks with blind ends. These bearing blocks can be moved forward or backward to keep the belt in alignment.

Steel carriage wheels only are used and these are provided with broad tires and roller bearings to insure easy moving. Fixed or swiveled axles can be furnished as desired.

The hoisting device is of the double gear type with automatic locking dog. Double cables are furnished and the hoist is not only easy to operate, but raises or lowers the conveyor rapidly.

Either an electric motor with 3 horsepower for conveyors up to 30 feet and 5 horsepower for length 35 to 45 feet, or a gasoline water-cooled motor is furnished, as desired. On the shorter conveyors power is transmitted by means of a steel roller chain from the power unit to a coun-



# No More "Grief"

## *with Crusher Lubrication*

The old system for crusher lubrication was crude—fill up the base of the crusher with a thick, black, cheap oil and when it runs out, pour in some more. Imagine the mess that accumulated in the base of the crusher: Babbitt flakes, iron filings and small particles of steel worked into the oil; dirt and sand slipped under the dust ring and into the gear chamber; occasionally a pint or two of water leaked in to further complicate the mixture. Gradually the oil, instead of a lubricant, became a cutting compound, to the serious detriment of the gears and eccentric bearings.

Sometimes the countershaft fared better; frequently worse, for this bearing carried ordinary grease cups. As for the suspension bearing, the oil could not be retained in it, so that long-suffering bearing ran dry most of the time.

Telsmith changed all that. Every bearing, every running part of the Telsmith crusher is provided with positive and continuous lubrication by Telsmith's gear-driven oil pump. Only a Telsmith has an oil storage tank—holding one-half of the oil in reserve at all times. After going through the crusher, the oil returns to this tank, where all coarse foreign matter is strained out and the oil is settled and cooled before going back into the crusher again. Thus fine dirt is kept out of Telsmith's bearings where in other crushers it is continuously circulating through the machine.

Catalog No. 171 (Telsmith Primary Breaker) and Bulletin No. 2F21 (Telsmith Reduction Crusher) give all the details about this and Telsmith's other exclusive features. Gladly mailed on request. No obligation.

# TELSMITH

## SMITH ENGINEERING WORKS

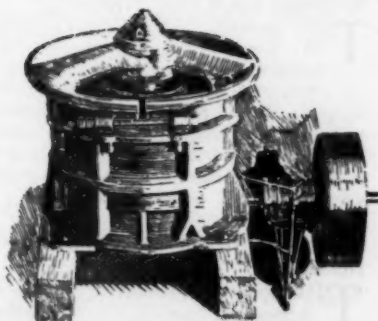
1820 Holton Street, Milwaukee, Wis.

Canadian Representative

Canadian Ingersoll-Rand Co., Montreal, P. Q.

11 West 42nd St. New York City	Old Colony Bldg. Chicago, Illinois	80 Federal St. Boston, Mass.
Beckwith Mchy. Co. Pittsburgh, Pa.	Tower Mchy. Co. Cleveland, Ohio	Milburn Mchy. Co. Columbus, Ohio
Knox Bq. & Eng. Co. Indianapolis, Ind.	Bunting Hdw. & Mchy. Co. Kansas City, Mo.	G. B. Mueller Co. Birmingham, Ala.

P. E. No. 15



When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

tershaft, and thence to the head pulley shaft through a steel chain and sprockets. On long conveyors, two countershafts are provided, the first being mounted above the motor and the second

being placed near the head pulley shaft. The drive between the two countershafts is through mitre gears and drive shafts fitted with universal joints. Alemite lubrication is used throughout.

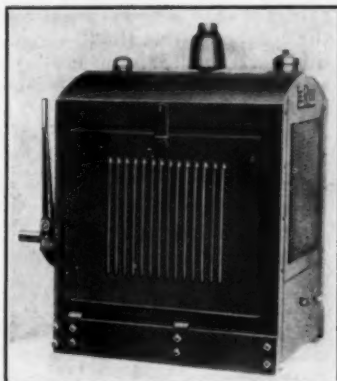
## A New 2-Cylinder Engine

*Junior Model Develops as High as 6 Horsepower*

**A** NEW model, 2-cylinder engine, developing as high as 6 horsepower has been put on the market by the Le Roi Co., Milwaukee, Wis. This new size junior member of the Le Roi line fills a gap between the smaller engines and the 8-horsepower class. It has all of the dependable advantages of the other engines of this company, and gives positive, efficient service.

One of the outstanding features of the new 2-cylinder engine that makes it particularly interesting to contractors is that its working parts are interchangeable with other Le Roi models.

This company now makes a complete line of engines, ranging from 3 to 160 horsepower, equipped to furnish power for all construction equipment, from the small tilting mixer to the big power shovel.



THE NEW LE ROI 2-CYLINDER GASOLINE ENGINE WHICH DEVELOPS AS HIGH AS 6 HORSEPOWER

### Notes of News

#### Milburn Opens Boston Office

**T**HE Alexander Milburn Co., 1416-1428 West Baltimore Street, Baltimore, Md., manufacturer of welding and cutting apparatus, portable carbide lights, oil burners and preheaters and paint spraying equipment, has organized an office in Boston to be known as the Alexander Milburn Sales Co. This office will be located at the Wiggins Terminals Building, 50 Terminal Street, Boston, Mass., and will be under the supervision of M. B. Crouse and G. B. Malone. This office will handle the sale and distribution of Milburn equipment throughout the New England states.

#### Williams Takes Over Hawley

**T**HE Williams National Form Clamp Co., 26 W. Kinzie Street, Chicago, Ill., has recently acquired the business of the Hawley Tie Bolt Co. The new name of the company is Hawley Mfg. Co. and it will continue to operate through the same distributors who have been working with the Hawley Tie Bolt Co. The officers of the company are D. F. Crimmins, President and Sales Manager, and B. W. Salmon, Treasurer.

#### Buffington Becomes Chief Engineer for Baker

**T**HE Baker Manufacturing Co., 585 Stanford Avenue, Springfield, Ill., has announced the appointment of Harry Buffington as Chief Engineer in charge of the manufacture of road machinery, earth moving equipment and snow plows. Mr. Buffington brings with him a wide experience in shop practice and machine design

through his long association with the International Harvester Co. and the Minneapolis Steel & Machinery Co. He was Chief Engineer of the Holt Manufacturing Co., Peoria, Ill., for several years and up to the time of his connection with the Baker Manufacturing Co. was Chief Engineer of the Weaver Manufacturing Co., Springfield, Ill., makers of garage equipment.

#### Cooper Joins Speeder Staff

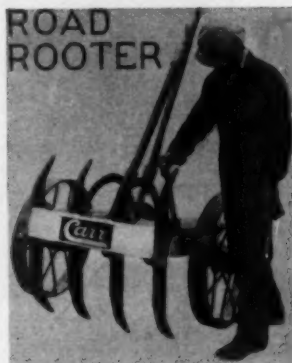
**T**HE Speeder Machinery Corporation, Cedar Rapids, Iowa, manufacturers of Speeder shovels, Pullshovels, cranes, draglines and skimmers, has announced the appointment of Glen D. Cooper, electrical engineer, as Assistant Sales Manager of the company. Mr. Cooper was for 17 years associated with the electrical industry and for the past few years has been in charge of the Public Relations Department of a large utility company. He will have charge of the organization and development of the industrial field, acting as assistant to T. M. Deal, Sales Manager.

#### New Conkey Company Distributors

H. D. Conkey & Co., Mendota, Ill., has announced the appointment of three new distributors for Conco cranes, as follows: in the Cleveland District, W. C. Minier, 848 Leader News Building, Cleveland, Ohio; in the Baltimore District, Chatard & Norris, 206 Water Street, Baltimore, Md.; and in the Pittsburgh district, The American Engineering Co., 727 Oliver Building, Pittsburgh, Pa.

## CARR MACHINES FOR SUBGRADE WORK

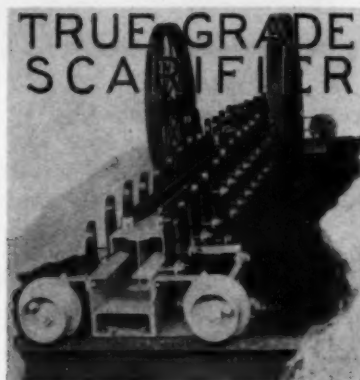
Revolving cutter takes the place of many picks and shovels on the 10,560 feet of form trench in each mile of road



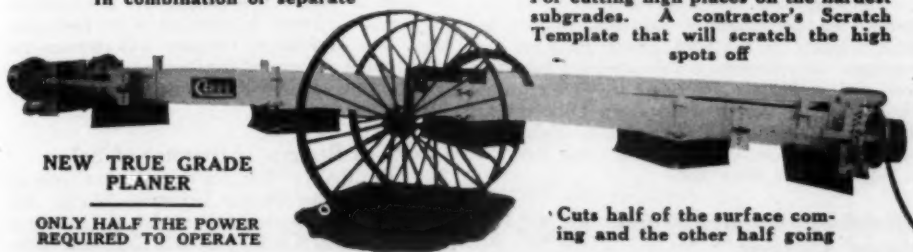
A modern  
Tractor Plow



Engineer's Scratch Templates  
and Clean-up Blades  
In combination or separate



For cutting high places on the hardest  
subgrades. A contractor's Scratch  
Template that will scratch the high  
spots off



ONLY HALF THE POWER  
REQUIRED TO OPERATE

Cuts half of the surface coming  
and the other half going

Write for  
Particulars

**Ted Carr & Co.**

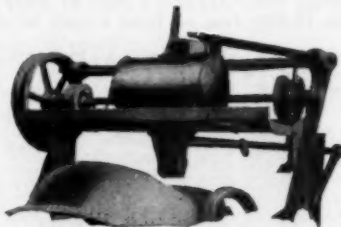
939 West North Avenue  
Chicago, Illinois

## A New Water Tank for Concrete Mixers

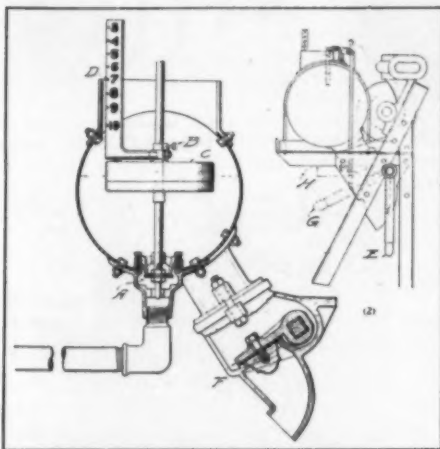
*Fast, Simple, and Positive in Action, This Time Saver Speeds Up Work and Increases Daily Output*

**A**N accurate measuring, easy operating, fast discharging water tank for concrete mixing has been developed by the Construction Machinery Co., Waterloo, Iowa. It is simple in design and discharges at the rate of two gallons per second. It gets the water into the mixing drum quickly—the proper amount at the right time.

One lever controls the entire operation. When this lever is in position "E" of the illustration below, the outlet valve "F" is closed and the tank is being filled. To discharge water into the mixing



THE NEW WONDERQUICK WATER TANK



THE NEW FAST DISCHARGING WATER TANK FOR WONDER MIXERS

drum, the operating lever is simply pushed from position "E" to "G," pausing a second or so until the remainder of the water is discharged and then continued to position "H" and returned quickly to "E." The cycle of operation opens outlet valve "F" and inlet valve "A" and when the lever is returned to position "E," closes the outlet valve "F." Inlet valve "A" is closed automatically when the proper amount of water has entered the tank.

To regulate the amount of water desired after deciding the quantity to be used, the thumb screw "B" is loosened and float "C" is moved up or down until the marker opposite the figure on the indicating scale reaches a straight line across the top of the tank as shown at key letter "D."

With this new water tank there is no 3-way valve to leak, or complicated mechanism to get out of order—no tilting or moving of the tank to wear out hose connections and cause delay. It is a time saver that speeds up work and increases output.

### Bosnian Made Chain Belt Superintendent

**T**HE Chain Belt Co., Milwaukee, Wis., manufacturers of Rex conveyors, traveling water screens, chain, and concrete mixers, has announced the appointment of Luther H. Bosnian, as Superintendent of the Park Street Plant of the company. Mr. Bosnian, a Yale graduate, has been connected with the Chain Belt Co.'s Production Department for the past eight years. Previous to this he was with the Westinghouse Electric & Manufacturing Co., coming to the Chain Belt Co. in 1919 as a time study man.

### Brownhoist-Industrial Works Merger Approved

**A**T the stockholders' meeting of the Brown Hoisting Machinery Co., Cleveland, Ohio, held September 26, the stockholders, without any dissent approved the merger and consolidation with Industrial Works at Bay City, Michigan. A similar meeting was held by the stockholders of the Industrial Works who also approved the merger and consolidation. The union

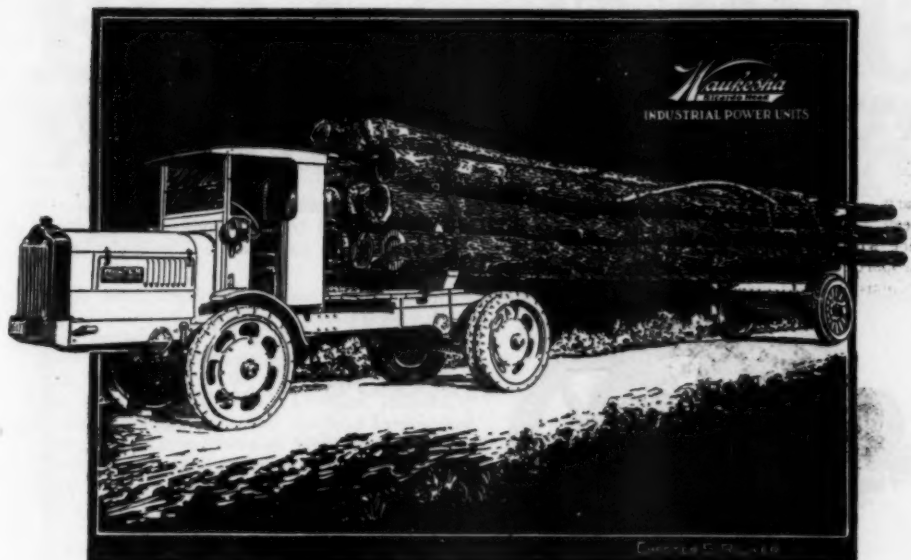
of the two companies was completed about October 1. The name of the new company is Industrial-Brownhoist Corporation. It is organized under the laws of Ohio with general offices at Cleveland. Alexander C. Brown is president of the new company. The consolidated company will continue the manufacture of material-handling machines, operating its plants at Cleveland, Ohio, Bay City, Mich., and Elyria, Ohio.

### Crawford Resigns as Director of Sales

**N.** R. CRAWFORD, for several years Director of Sales for the Industrial Works, Bay City, Mich., has resigned as of October 1. No announcement has been made as to his future connection.

### Birmingham Office of Hunt Company

**T**HE Robert W. Hunt Co., Engineers, Inspection and Tests, 2200 Insurance Exchange, Chicago, Ill., has announced the new location of its Birmingham office in the Bankers Bond Building, Birmingham, Ala.

*Waukesha Engined Walter Four-Wheel Drive Lumber Tractor*

n-726-m

## Summer and Winter

Power—lots of it and reliable—is necessary to bring these big four-wheel drive tractors, carrying 12 to 15-ton loads, through the snow and muddy roads in the year round service to which they are put. Heavy duty six-cylinder engines of the same design as the big 100 H.P. four-cylinder power shovel engines now so well known are used. Such service proves the correctness of the principles on which all Waukesha "Ricardo Head" engines are built and the character of workmanship put in them.

*Within a year after the first of these Walter Truck Tractors was introduced into one Pennsylvania logging district, twenty-eight more were sold. Reliable Power is essential to their success. Efficiently applied to all four wheels, as in this case, explains the phenomenal success of these tractors. No matter what equipment you buy—if it has a Waukesha Engine, you know that it is reliable because in each case the companies who value their reputation highly have selected Waukesha heavy duty engines.*

N-776-L

INDUSTRIAL EQUIPMENT DIVISION

# WAUKESHA MOTOR COMPANY

Waukesha

Wisconsin

New York  
8 W. 40th St.Kansas City  
V. L. Phillips Co.Denver  
Wilson Macky Co.Tulsa  
C. F. Camp Co.Houston  
Portable Rotary Rig Co.San Francisco  
C. A. Watts

*Exclusive Builders of Heavy Duty Gasoline Engines for Over Twenty Years*

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



## A New Line of Gasoline Engines of 1½ - to 6-Horsepower

### *Embodies Improvements in Many Parts*

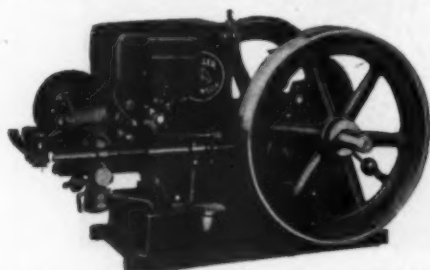
A NEW line of engines known as model "NC," in sizes of 1½-, 2-, 2½-, 3½-, 4-, and 6-horsepower, has been brought out by the Fuller & Johnson Manufacturing Co., Madison, Wis. The new features consist of improvements in carburation and ignition. A new vaporizer has been developed which mixes the fine spray of gasoline with the incoming current of air in the exact proportion necessary to secure practically perfect combustion. The spark plug is so placed as to ef-

fect the hottest spark and in this way secure better performance.

The 1½-horsepower model is now furnished on skids, the 2-horsepower is furnished on iron base or skids, while all the remaining larger sizes are furnished on iron base. Any of the models can be mounted on hand trucks, if desired. The larger and heavier sizes can also be furnished mounted on team trucks.

Among the noteworthy points of these engines are the long, accurately ground pistons, each carefully fitted to insure long life; machine-cut gears, insuring accurate timing; accurately ground cams making for smooth and efficient operation; large crankshaft made of special forged carbon steel heat treated to obtain uniform strength; wide-faced fly-wheels; perfectly balanced, adjustable connecting rods with heat-treated bolts and laminated shims; large sight-feed oiler assuring good lubrication; and large no-splash hopper with wide waterways.

A reduction in prices of all Fuller & Johnson engines has also been announced. This was made possible by increased production and further standardization of parts.



ONE OF THE NEW MODEL NC FULLER & JOHNSON GAS ENGINES

### Wire Cable Construction Wins Hudson River Bridge Contract

THE Hudson River Bridge between Washington Point, Manhattan, N. Y., and Fort Lee, N. J., will be of wire cable construction as the Port of New York Authority awarded the contract for the cable to John A. Roebling Sons' Co. of Trenton, N. J., for \$12,339,977.

There has been much interest through the last fifteen months as to whether eye-bar construction or the better known wire-cable construction would be used on this bridge. The engineers of the Port of New York Authority have been open-minded and have received suggestions from all interested. Two complete sets of plans and specifications were drawn up to permit the fullest competition in bids.

At the same time the wire cable contract was let, the contract was awarded for the steel towers and floor of the bridge to the McClintock-Marshall Co. for \$10,134,440. The lowest bid the Commission received from a contractor proposing to do both the cable and steel work was \$600,000 more than the total bids of the Roebling and McClintock-Marshall firms.

The Commission's engineering staff agreed that the competition between contractors for the work of building the bridge has saved several million dollars. In a formal statement, John E. Ramsay, Chief Engineer, Port of New York Authority, said: "It was estimated that the structure would cost between \$25,000,000 and \$30,000,000. There

has been a considerable saving, due, we believe, to the wide competition. It has been stated that an eye-bar bidder was confident that his figures for the cables and steel work were altogether too low, but it proved to be \$2,000,000 more than the total reached by adding the Roebling and McClintock-Marshall proposals."

### Business Cycle—The Problem and Its Setting

THE National Bureau of Economic Research, Inc., New York, has recently issued Wesley C. Mitchell's valuable volume "Business Cycles—The Problem and Its Setting." In this, Dr. Mitchell's first book on the subject since the publication of his pioneer work in 1913, he explains the processes involved in business cycles, shows how our present economic organization was evolved, describes how to use statistics in the study of business cycles and how to use annals, and finally combines the insight derived from business annals, theoretical explanations and statistical researches into a working concept of business cycles. Dr. Mitchell's reputation among the world's economists as the foremost investigator of business cycles and the fact that his first treatise on the subject published in 1913 gave American usage the very term "business cycles" give the new book commanding authority. The price of this book is \$6.50 postpaid.

# BULL FROG WHEELBARROWS

## *THE BARROW YOU'VE BEEN LOOKING FOR*

Go over this Bull Frog No. 42 wheelbarrow point by point and see if you can think of a single place where it could be bettered. Lightness, strength, rigidity, ease of handling, are outstanding features. The seamless tray is always level when the handles are raised. Angle-iron wheel-guard loop facilities forward dumping and positively protects the barrow. Shaped handles, malleable iron replaceable shoes, angle-iron legs, extending along and reinforcing the frame, easy running "Never Break" wheel—these are a few of the outstanding features that make this the outstanding barrow for the contractor. Ask your jobber or write us for additional data and prices. Get our catalog, showing Bull Frog barrows, carts, and scrapers for every purpose.



**THE TOLEDO WHEELBARROW CO.**  
Toledo, Ohio  
Branch Office and Warehouse  
CHICAGO  
69 E. Wacker Drive

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## A New Oil Burning Kettle

*Asphalt Heater in Capacities of 300 and 550 Gallons for Road Construction Work*

**A**N exclusive oil burning asphalt melting kettle for road construction work has been developed by Littleford Bros., 485 E. Pearl Street,

Cincinnati, Ohio. It is known as Type 83 and is made in two capacities, 300 and 550 gallons.

This kettle embodies practically all of the features of the "contractors' special" wood burning kettle, Type 48, of this company, except that it is built for burning kerosene or a light furnace oil exclusively. Two oil burners supply an intense heat which the manufacturer claims will melt batches of asphalt in a much shorter time than is possible with a wood or coal fire.

The kettle carries a fuel tank of 20 gallons' capacity, and is mounted on roller bearing wheels and high carbon steel axles. While standard equipment includes all steel wheels, the kettle is mounted on solid rubber tires, with steel heat guards when desired.

A warming hood to take the place of the standard cover, and a barrel hoist for raising barreled materials, are accessories which can be furnished.



THE NEW LITTLEFORD TYPE 83 OIL-BURNING ASPHALT MELTING KETTLE

## A New Motor Grader

*Powerful Scarifier, New Type of Yoke and a Low Platform with Fenders and Cab are Features*

**A**NNOUNCEMENT has been made of a new Cletrac grader by The Galion Iron Works & Manufacturing Co., Galion, Ohio. This is the E-Z lift motor grader combining the Cletrac 20 tractor with Galion grader parts. Its features include a powerful scarifier, a new type of spring suspended yoke, and a low platform with fenders and cab. Thus, owners of a Cletrac 20 may have a motor grader complete by purchasing the grader parts only.

The assembling of these units is simple; loosening four attachments and hoisting the rear of the grader make the Cletrac immediately available for other services.

A feature of value in this new combination is the compensating differential and planetary transmission of the tractor, which causes it to follow the front wheels of the grader as steered by the operator. At the same time the steering mechanism of the tractor is instantly available in difficult situations, giving the operator a powerful extra factor of control when needed.

Steering, scarifier control, and blade lift are all



THE GALION-CLETRAC MOTOR GRADER

by machine cut worm gearing operation in a bath of oil in an oil tight gear case. The complete machine is sturdy, durable, easy to operate and efficient, and aptly suited to the most difficult operations.

## Airports and Airways

**A**VERY complete volume covering the establishing, constructing, operating and maintaining of airports has been prepared by Lieutenant Donald Duke, Chief, Airways Section, U. S. Army Corps, and is published by the Ronald Press Co., New York. This book is primarily valuable because it gives a comprehensive idea of the coming mode of transportation and the preparation which

must be made to facilitate it by proper terminals and way stations. Of particular interest to the contractor are the needs for drainage, proper grading and the construction of runways. Any progressive citizen will find the book fascinating and it will undoubtedly create much interest in the establishing of local airports. The price of the book is \$5.00.

**Patching now  
saves building  
—in the Spring**

**F**ORTIFY your roads now. Strengthen the weak spots before Winter sets in. It will avoid increased expenses in the Spring.

Only twelve gallons of the new, improved "Tarvia-KP" is needed to a cubic yard of stone to make a perfect patching mixture.

Try the 12 to 1 "Tarvia-KP" mixture this Fall. You'll find it gives you worthwhile savings in cost of materials—and a better job.

**The *Barrett* Company**

New York	Chicago	Philadelphia	Boston
St. Louis	Cleveland	Cincinnati	Kansas City
Detroit	Salt Lake City	Birmingham	Lebanon
Minneapolis	Midwaukee	Bethlehem	Columbus
Youngstown	Syracuse	Toronto	Rochester
Baltimore	Providence	Buffalo	

**In Canada:**

**THE BARRETT COMPANY, Limited**  
Montreal Toronto Winnipeg Vancouver

**Tarvia-KP**  
FOR COLD PATCHING

## A New Type of Highway Guard Railing

*Resilient Safety Rails That Absorb and Withstand Strains and Blows*

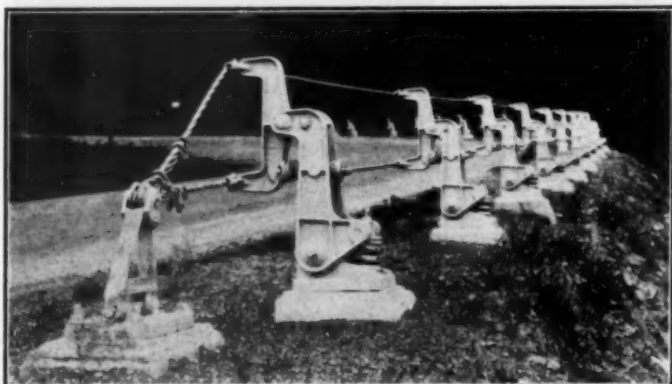
**F**OR the protection of dangerous locations such as usually occur at abrupt turns, steep embankments, bridge approaches, etc., a new type of mechanical highway guard-rail has been developed by Joseph H. Ramsey, Albany, N. Y., in collaboration with District No. 1 of the New York State Department of Highways.

This new rail is designed to take the place of the old, heavy, wooden fences and the reinforced concrete posts. It is built around the principle that resilient mechanical means shall be embodied within the cable supports to cushion and absorb the forces of impact resulting from a colliding motor car, and that the materials used shall be capable of withstanding terrific strains and blows.

The guard-rail supports are of malleable iron and comprise bases upon which are pivotally mounted on cupped bearings pairs of vertical struts or side plates. These struts support at their upper ends equalizers pivotally mounted on cupped bearings between them. The equalizers are maintained

The malleable iron castings with their cupped bearings and cushioning springs comprise a support for the cables of maximum resilience and strength, and this is mounted upon a concrete pier or foundation 14 inches square by 42 inches in length to which it is secured by two  $\frac{3}{4}$ -inch diameter anchor bolts cast integral with the pier. The cable supports, anchors, cables and exposed ends of the piers are painted white to afford maximum visibility.

When an automobile collides with the guard-rail, the equalizers at first automatically adjust themselves to distribute the impact equally upon the two cables, thus engaging the maximum supporting surface upon the car. When the "crash" occurs the forces of impact are guided through the equalizers to the vertical struts with their cupped bearings, downward into the compression springs in the bases, and thence through the piers to the earth. By so directing and cushioning the forces of impact the damage to the automobile, its occupants and the guard-rail, is reduced to a minimum.



RAMSEY  
GUARD RAILING  
SHOWING  
METHOD OF  
LESSENING  
DAMAGE  
TO VEHICLES  
STRIKING  
IT

in their normal positions shown by pairs of compression springs located between the vertical struts. The struts are wider apart at the bottom to effect proper side-bracing and are maintained in their normally vertical positions shown against the action of heavy compression springs at the rear of the bases.

Upon the facing portion of the equalizers are two brackets projecting toward the highway upon the ends of which the cables are freely suspended by U-shaped stirrups. By holding the cables away from the faces of the equalizers, the cables present a smooth, resilient and uninterrupted surface for keeping the motor car within the limit of the roadway. This device also prevents parts such as fenders, hub-caps, running-boards, etc., from coming into contact with any portion of the cable supports. The ends of the cables are passed around sheaves in malleable iron brackets, which are hinged to base castings upon concrete foundations.

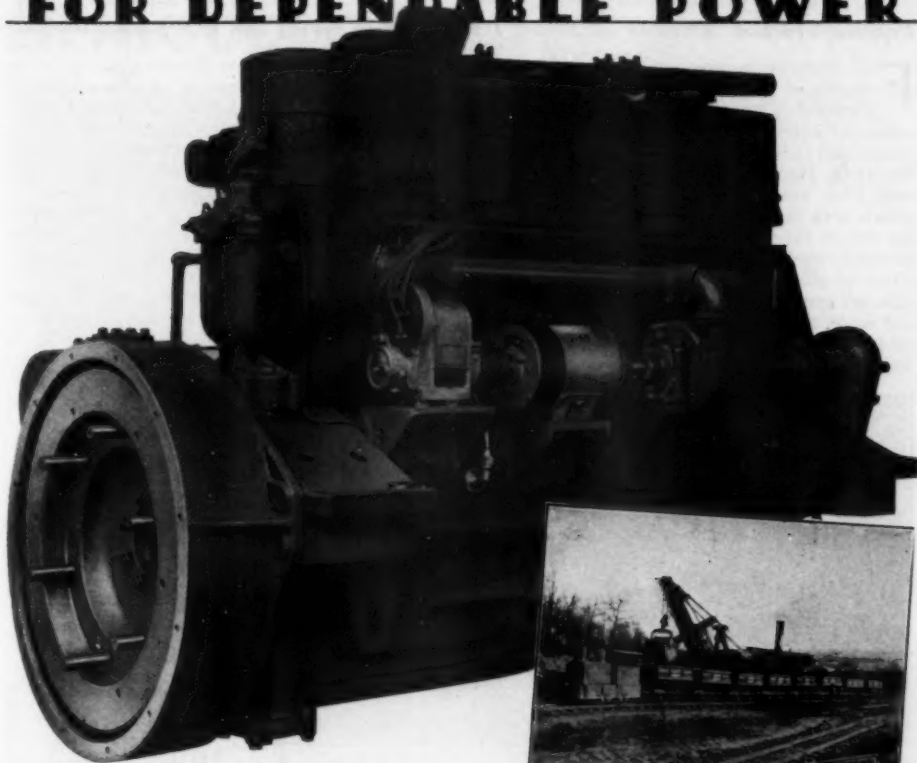
The piers may be pre-cast or poured in place, in which event an extensible steel form may be used. Owing to the great strength of the supports and piers compared with that of any other type, they may be installed on 16-foot centers, thus keeping the cost per lineal foot of guard-railing very close to that of the older forms.

### New Trackson Distributors

**T**HE Trackson Co., 519 Clinton Street, Milwaukee, Wis., has announced the appointment of the Tractor Equipment Co., 701 South Broadway, Denver, Colo., as distributor for the Denver territory, and the Monarch Auto Co., Louisville, Ky., for the Louisville territory. Both of these companies will carry the standard Model F and heavy-duty Model D Trackson Full-Crawlers which convert the Fordson into either a 2-ton or 3-ton crawler tractor.



## FOR DEPENDABLE POWER



### *Keeping Things Moving*

**T**HOSE HEAVY JOBS — where idle moments cost so terrifically — reflect the character of the power. There, power must be dependable to keep things moving constantly—to safeguard contractors' profits.

It all reverts back to the kind of power — the kind of engine. Le Roi Industrial Engines are exclusively used in heavy service. What testifies better to their reliable and economical power?

**LE ROI COMPANY**  
Milwaukee, Wis.

**LE ROI ENGINES**  
**3 to 160 HORSE POWER**



Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

## Steel Extension Wheels for Rubber Tires

*Positive Traction Afforded in Heavy Pulls in Early Spring and Wet Season Weather*

**F**OR highway maintenance work in the early spring or later during wet seasons, where extremely heavy draw-bar pulls are encountered and where soil and other conditions are severe and added traction facilities are needed, French & Hecht, Davenport, Iowa, and Springfield, Ohio, are now building steel extension drive wheels with cleats that extend partly over the rubber tire on the inside and protrude in the opposite direction from the outer edge of the wheel rim. These wheels are especially adaptable where heavy pulls are required in cases where ditches are cleaned and made, and where extreme grading work is to be done at the side of the road. They are now being built in all the various sizes required for rub-

ber conventional manner and extend partly over the rubber tire. An advantage of this particular design is that the full benefit of the rubber tire is maintained, making for easy riding on the part of the operator and at the same time gives the lugs contact with the ground. Penetration is thereby obtained and positive traction assured.

Another development that has been made in rubber tired equipment for industrial tractors, especially where used for highway work, is steering bands for the front wheels. These bands are made of steel angle irons and pass entirely around the wheel over the rubber tire, being brought up tightly against the rubber tire by a draw-bolt. In this design, one leg of the angle extends outward



**MCCORMICK-  
DEERING RUBBER-TIRED  
TRACTOR  
WITH  
STEEL  
EXTENSION  
WHEELS**

ber tired wheels and will fit any wheel tractor used for industrial purposes.

As applied to the McCormick-Deering 15-30 tractor, the diameter of the extension wheels is the same as the outer diameter of the 50-inch rubber tires. The extension wheels are attached to the main wheels in the same way as rubber tired extension wheels, by having lugs through which bolts pass to hold the rims rigidly together and having the hubs machined so that one fits into the other, both hubs being held together by machine bolts. Thus, the main wheel and the extension wheel are one unyielding solid unit.

The cleats are made of angle irons having the corners extending outward and are bolted to the extension wheels by three large bolts. These cleats are placed on the extension wheels in the

while the other leg forms the base for the steering band and rests against the rubber tire.

These steering bands are especially advantageous in cases where heavy duty is required of tractors, and soil conditions are such that there is a tendency for the tractors to slip sideways under heavy pulls. They are very useful on the front wheels of one-man maintainers mounted directly on the tractors. In such cases, there is considerable side strain due to the angle of the blade, and the steering bands hold the tractors in place on the road. Added traction is gained by the tractor, because of the fact that the tractor is held in a straight position as it goes forward and not diagonally, as is true where the wheels slip off to one side. These steering bands are also made for all the various sizes of industrial tractor front wheels.

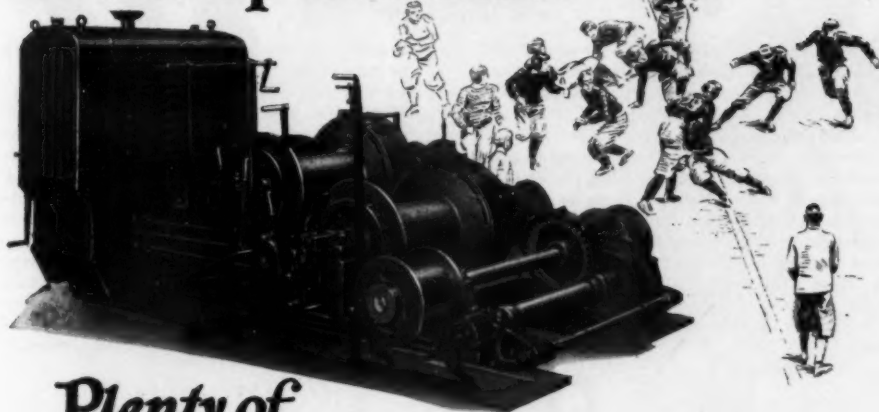
### New Climax Service Station

**T**HE Climax Engineering Co., Clinton, Iowa, has announced the appointment of John Reiner & Co., Inc., 309 Church Street, New York, as Climax service representative for the States of Connecticut, New York and New Jersey. This organization maintains a complete assortment of repair parts for all models of Climax engines and has available a corps of experienced service engineers.

### Rome Mfg. Co.'s New Branch

**T**HE Rome Mfg. Co., Rome, N. Y., producer of the Rome high lift line of regular and motor-driven graders, has established a branch at 12 North 15th Street, Richmond, Va. W. S. White, Manager, was for over twenty-two years local Manager for the Austin-Western Road Machinery Co. Associated with Mr. White will be P. G. Purdue, W. M. Masters and C. L. Hechler, all experienced in this line in Southern territory.

# In the open field..



## Plenty of Speed and a Change of Pace

TRADE MARK  
**MUNDY**  
ESTABLISHED 1899

### To Equipment Distributors

The New Patent Three-Speed Hoist is fully protected by patents in the United States and Canada.

Some open exclusive sales territory is now available.

**T**HERE he goes! Through the line—the secondary defense—and on into the open field! Dodging, squirming, now slow—now fast—outwitting tacklers by clever running. Thirty, forty, fifty yards for the winning touch-down, and the star backfield man wins the hearts of the fans and further secures his position at the top of the scoring column.

That's the way it goes in football. The all-American ball toter must have the "stuff." He's the man who thinks and acts quickly—to suit the circumstances at the instant. He's the man who can "pick his hole"—get through it—and keep going. To do these things he must have *speed*—a quick get-a-way—and what is all-important—a quick change of pace.

The Mundy Patented Three-Speed Hoist is the unquestioned choice for "all-American" in the hoisting field.

Just as many of the sterling qualities of the star football man as it needs—it has. Outstanding among these are power, speed and change of pace. In the scoring column the Mundy stands *ace high*—with points piled high in its favor. Its three speeds provide power for hitting the line, more speed for the secondary defense, and then more speed for the open field where the going is easier. *A different speed for every load.* What more could you ask for in a hoist?

### The Mundy Sales Corporation

*Distributors for the J. S. Mundy Hoisting Engine Co*

30 Church St., New York

*Agents in Principal Cities*

# MUNDY HOISTS

## The Hoist With The Asbestall Frictions

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## A New Heavy-Duty Portable Turbo-Generator

*Self-Contained Unit Is Designed for Construction Work Operation Under Most Adverse Conditions*

A NEW 2½ kw. heavy-duty, portable turbo-generator, which is completely self-contained, has been developed by the Pyle-National Co., 1334-1358 North Kostner Avenue, Chicago, Ill. This unit, Type M-2-S, requires no switchboards, fuse panels or rheostat and has been designed automatically to maintain voltages with extreme accuracy despite wide variations of steam pressure. It is made to operate on steam and is suitable for use under the most adverse conditions in furnishing light or current for portable tools in construction work where generating equipment must be easily portable, extremely rugged and at the same time able to deliver constant, automatically regulated current.

of normal even though the steam pressures vary all the way from 80 pounds to 200 pounds.

This wide range of automatic regulation is especially valuable where current is demanded for electrical tools, since the fluctuating load occasioned by the demand of the tools will not dim the lights and disrupt the flow of current. It also affords a distinct economy in steam consumption, as only sufficient steam is admitted to handle the load as it is called for.

The unit is designed to operate continuously over long periods of time without any attention to either adjustment or maintenance. Heavy-duty ball bearings and large capacity oil chambers enable the unit to run for months at a time without attention.



**PORTABLE  
ELECTRIC GENERATOR  
FOR  
FURNISHING  
LIGHT AND POWER  
ON  
CONSTRUCTION  
JOBS**

The new large capacity permits the unit to handle a continuous load of sixty 40-watt lamps or twenty 500-watt lamps or any combination having a demand of 2½ kw. When it is desired to make use of flood light illumination in construction work, the unit will handle a pair of 500-watt flood lamps with an additional string of fifteen 100-watt lamps. On all flood light illumination it will handle five large flood lamps continuously with ease.

An automatic regulating mechanism has been perfected which will maintain uniform voltage under extreme fluctuations of steam pressure or load. It will hold voltages constant to within three volts

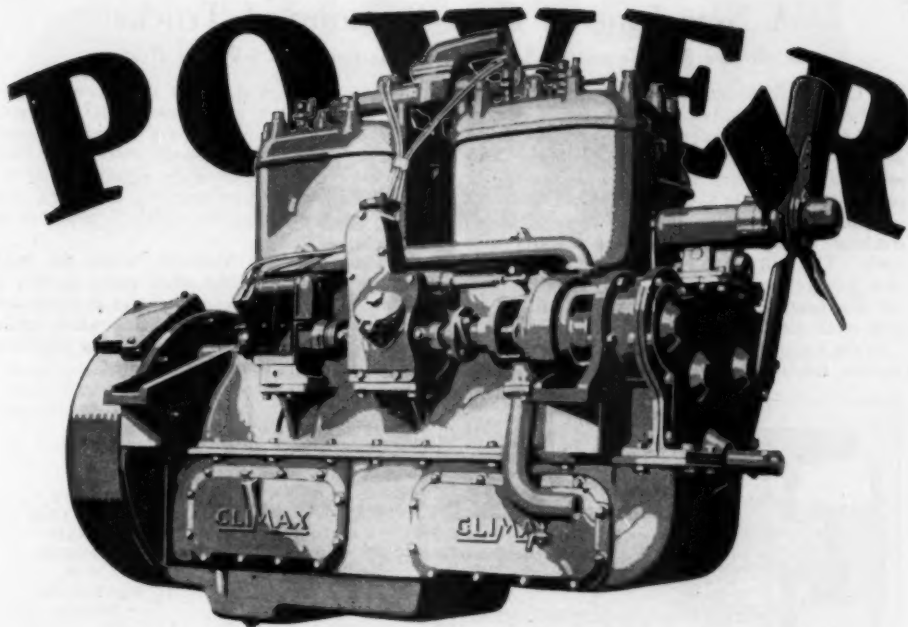
Great rigidity has been maintained, since this kind of equipment demands a high degree of portability. Practically the only base necessary is a heavy plank or packing case sufficient to prevent breaking of the steam line. The mounting of an enclosed fuse panel and safety switch box as an integral part of the unit in place of the usual terminal box is a new feature. This makes the unit complete in itself and avoids the necessity for additional wiring, fuse and switch arrangement. All that is necessary for operation is to provide a steam or air supply and to connect the circuit to the terminal box.

### Milburn to Represent Mundy

THE Mundy Sales Corporation, 30 Church Street, New York, has announced the appointment of the Milburn Machinery Co., Columbus, Ohio, as exclusive agents for Mundy products for central Ohio.

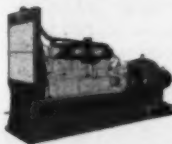
### Miami Trailer-Scraper Distributors

THE G & G Equipment Co., 47 West Seven Mile Road, Detroit, Mich., has been appointed distributor in the Michigan territory for Miami scrapers and back fillers manufactured by The Miami Trailer-Scraper Co., Troy, Ohio.



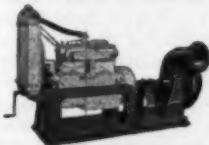
Climax Portable and Stationary Engines are available in 4 or 6-cylinder models, with a range of 40 to 120 H. P. These power units are easily and economically equipped for connecting to belt driven units.

### **CLIMAX Belted Power Units**



Climax Engines are particularly well designed to carry the steady load of direct connected generators, for either permanent or stand-by service.

### **CLIMAX Direct Connected Generators**



The design of Climax Engines make them readily adaptable for driving centrifugal pumps having pumping capacities of 500 to 6000 gallons per minute.

### **CLIMAX Direct Connected Pumps**

## **Performance**

The balanced design, combined with the reserve strength of exceptionally husky construction, has long given Climax engines the qualities that spell **Power and Performance** for their users.

CLIMAX ENGINEERING COMPANY  
71 West 18th Ave., Clinton, Iowa

# **CLIMAX**

*Trustworthy Engines*

FOR

Shovels  
Other Excavating  
Machinery  
Road Rollers  
Tractors  
Farm Machinery  
Industrial Locomotives

Locomotive Cranes  
Portable Saw Mills  
Compressors  
Pumps  
Generators  
Stone Crushers  
Hoists

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.



## A New Line of Fast, Economical Trucks

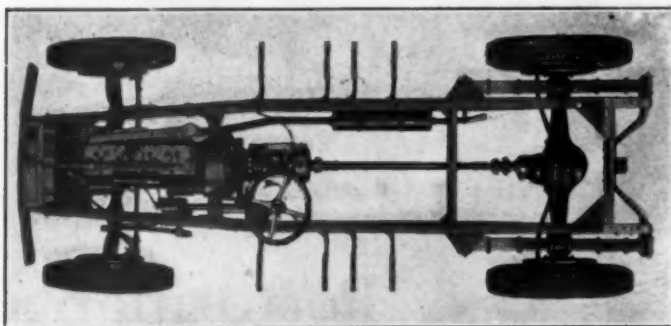
### 6-Cylinder Models with 4-Speed Transmissions and 4-Wheel Brakes

A COMPLETE new line of trucks, a feature of which is a fast and powerful 6-cylinder 2-ton chassis available in three types, is announced by Graham Bros., Detroit, Mich. This new model, together with improvements in the present line of 4's, in  $\frac{3}{4}$ -, 1- and  $1\frac{1}{2}$ -ton capacities, will materially aid in speeding up contractors' trucking operations and lowering transportation costs. The 4-forward-speed transmission in the new 2-ton chassis assures surplus pulling ability for emergencies and makes possible moderate engine speed for fast, long runs.

In the 6-cylinder model, the 7-bearing crankshaft assures the rugged service demanded in motor

positive braking and make the truck easy to control. These brakes are automatically equalized, largely eliminating the necessity of making even the simple mechanical adjustment provided for each individual brake. An automatic supply tank is directly incorporated into the unit containing the master cylinder so that the system is kept full at all times.

In addition to the hydraulic brakes the hand lever operates a propeller shaft brake so that a positive mechanical locking brake is provided for use when the truck is parked. The whole brake system is very rugged throughout, highly simplified as a whole and scientifically mounted.



CHASSIS  
OF THE NEW  
GRAHAM  
BROTHERS  
2-TON,  
6-CYLINDER  
TRUCK

truck operation. It weighs 69 pounds and is machined all over. The connecting rods of chrome-vanadium steel and pistons of light alloy give the strength and snap desired. Modifications in the manifold, elimination of the thermostatic control and the intake heat regulator controlled from the driver's seat, which are used in the Dodge Bros. 6-cylinder passenger car, together with the use of a special carburetor jet and a special truck type fan, have been slight changes to adapt this engine to truck service.

Lockheed hydraulic 4-wheel internal expanding brakes built for heavy service provide quick and

The 6-cylinder trucks can be had with various axle gear ratios which are optional with the purchaser. The axle gear ratio represents the number of revolutions of the engine crankshaft corresponding to one revolution of the rear wheels in high gear. The axle is furnished in three ratios; 5.1 to 1, 5.667 to 1, and 6.375 to 1, the first giving the fastest vehicle and the last the slowest for the same engine speed. The choice in axle gear ratios makes it possible to give better service to the owner by careful consideration of his power requirements. Transportation costs are lowered and trucking operations greatly facilitated.

### Winter Building is Tonic to Trade

THE building and allied trades have ceased to suffer from the annual winter construction slump as the popular winter building bogey has been overcome. Wise builders are planning now for construction straight through the cold winter season. Use of twelve months in the year instead of eight or nine months eliminates the loss from seasonal depressions that has been so costly to industry.

Construction engineers agree that building in winter is not only practical, but highly desirable from the owner's standpoint as well as the worker's. Structurally, building operations can go on through cold weather without any risk if ordinary precautions are taken.

Employment during the winter months means that the economic stability of business will be main-

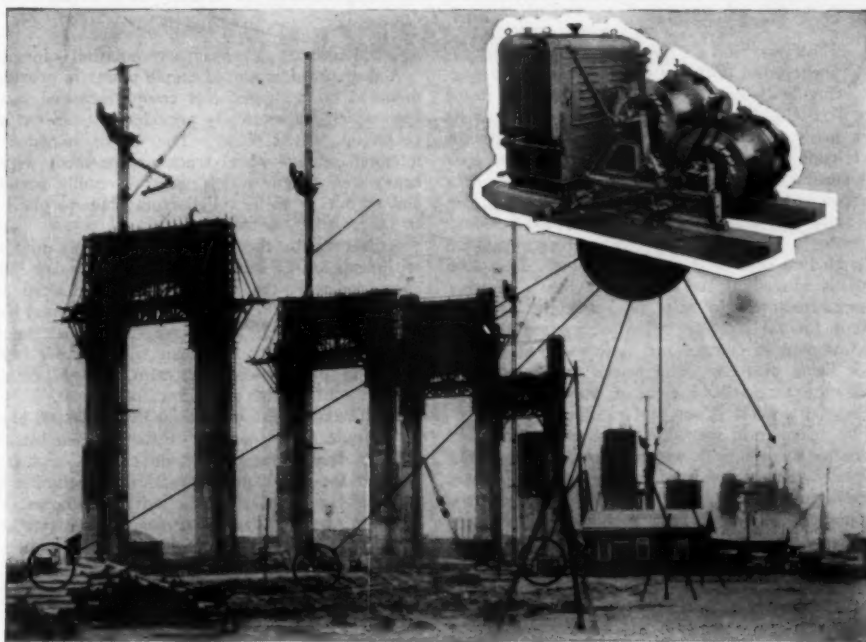
tained. Not only men employed on construction work but those supplying building materials and engaged in the many lines touched by construction are able to retain their standards of living. Maintenance of these standards and with them buying power is reflected automatically in the markets of trade. Healthy activity in the five billion dollar construction industry is stimulating to all others. Building statistics for the past few years, according to George E. Warren, Assistant General Manager, Portland Cement Association, reveal that more and more buildings are being financed and built during the winter months. In sixteen cities surveyed payrolls and material purchases have mounted each year. Indications are, according to contractors, that the winter of 1927-1928 will eclipse any previous winter construction period.

# HOISTS CLYDE DERRICKS

The Triest Contracting Corporation and the Frederick Snare Corporation of New York City built the approaches to the Staten Island bridge spanning the Arthur Kill between Staten Island and New Jersey.

A Clyde 35 H. P. double drum gas hoist operated an Insley tower on each pier. Both contracting firms were highly pleased with the performance of their Clydes. The illustration below shows the work in construction and the location of the Clyde units. Complete data about any type of Clyde hoisting equipment furnished gladly on request.

*You'll Take Pride In Your Clyde!*



## CLYDE IRON WORKS SALES COMPANY

Sole Distributors for CLYDE IRON WORKS, Duluth, U. S. A.

*Stocks Carried in the Following Warehouses:*

NEW ORLEANS  
309 Magazine St.

NEW YORK CITY  
E. 136 St. and Locust Ave.

PORTLAND, ORE.  
555 Thurman St.

SEATTLE  
3410 First Ave. So.

*Branch Offices:*

CHICAGO  
11 So. La Salle St.

CINCINNATI  
201 W. Pearl St.

MEMPHIS  
69 Union Ave.

JACKSONVILLE  
112 West Adams St.

SAN FRANCISCO  
737 Monadnock Bldg.

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.



THE  
ROTOR BRICK  
CLEANING MACHINE  
WITH  
THE TABLE  
TILTED UP TO  
GIVE  
ACCESS TO THE  
REVOLVING  
HEADS

## A Machine for Reclaiming Brick

*Finished Brick Is Entirely Free from Scale, and Adjustment Is Made for Various Sizes and Types*

A NEW machine for removing mortar and cement from ordinary building brick and paving brick has been developed by The Rotor Air Tool Co., Cleveland, Ohio. This unit consists of a main table below which is mounted a main shaft running in Hyatt roller bearings. Two special cutting heads containing the cutting members are mounted on this shaft with special provision for the quick and convenient installation and removal of cutters. These cutting heads project slightly through two slots or ports in the table. The table itself is hinged at the back end with a positive screw adjustment to raise or lower the forward end of the table. This adjustment gives the desired amount of contact and blow required for the brick being cleaned. The bricks are handled in the same manner that a piece of wood is planed or shaped on a wood joiner.

The openings in the table are directly connected to an exhaust blower which drives the dust and lighter material removed to a convenient place. Immediately below the cutter heads themselves two automatic dump doors are mounted. These are counterbalanced so as to trip and discharge waste

material automatically as an accumulation is formed.

A dust proof motor of ample power is provided, mounted on a hinged and counterbalanced motor base which automatically provides belt tension and takes up belt stretch. The entire machine is mounted on a 4-wheel truck arrangement with a heavy steel tongue which makes it readily portable and permits it to be rolled from place to place or to be pulled by a tractor.

According to the manufacturers, this machine will clean 3,000 9-inch brick per 10-hour day. This compares with the maximum production of 900 9-inch brick for the three men under the usual hand chipping methods. Tests have shown that the actual cost is usually less than one cent per brick, including interest on investment, cost of cutters, current consumption and direct labor cost.

Each head on the machine delivers 600,000 blows per minute. The surface of the finished brick is entirely free from mortar or cement, and it is claimed the breakage is practically negligible because of the lightness of the individual blows. The machine may be adjusted to perform satisfactorily on a great variety of sizes and types of brick.

## Thew Enlarges Sales Staff

THE Thew Shovel Co., Lorain, Ohio, has recently announced the appointment of five new men to handle the sales of Lorain 75A and Lorain 60A shovels, cranes, draglines and back-diggers. James S. Griffin, formerly a railroad contractor and experienced in the sales of shovels and contractors' equipment in New Mexico, Colorado, and Wyoming, will make his headquarters in Denver, Colo., to cover the above states. E. L. Sparks will be in charge of sales in California. Mr. Sparks has had a wide experience in construction and sales work, for five years representing one of the large steam shovel companies in the New England states and later being connected with the Ohio

Locomotive Crane Co. More recently he has been district manager for the Williams Bucket Co. in New York. J. L. Trout has been assigned to the Pennsylvania, Ohio, and West Virginia territory, having had five years' experience in the sale of power shovels, and many years' experience as an operator. M. B. Garber has been appointed Promotion Engineer, as his many years' experience as Sales Manager with the Sanderson Cyclone Drill Co. should prove valuable in solving problems of quarries and in the handling of crushed stone, sand and gravel and other rock moving jobs. P. A. McMillen has been attached to the Co.'s Chicago office as Sales Engineer.

# \$1595

(CHASSIS F.O.B. DETROIT)

*for* **A TWO-TON TRUCK**

*with* **6 CYLINDER ENGINE**

*and* **4 SPEED TRANSMISSION**

*and* **4 WHEEL BRAKES**  
(LOCKHEED HYDRAULIC)

This is the lowest price at which  
a 6-cylinder 2-Ton truck has  
ever been sold . . . hundreds  
of dollars lower than any other  
comparable truck . . . See it . . .

**GRAHAM BROTHERS**

EVANSTON - DETROIT - STOCKTON  
A DIVISION OF DODGE BROTHERS, INC.  
GRAHAM BROTHERS (CANADA) LIMITED, TORONTO, ONTARIO

# GRAHAM BROTHERS TRUCKS

Sold and Serviced by  
Dodge Brothers  
Dealers Everywhere

Built by Truck  
Division of Dodge  
Brothers, Inc.

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

## A Wedge Gives Positive Adjustment for Concrete Forms

### *Perfect Adjustment and Continuous Take-up Device Used in This System*

**P**ERFECT adjustment to the smallest fraction of space and absolutely tight locking of concrete column forms has been assured by Howard O. McMillan, President of the M & M Wire Clamp Co., Minneapolis, Minn., who has per-

The clamps consist of four arms with hinged castings. The casting folds on to the clamp arm when not in use which permits easy storage. They are high grade malleable castings and the clamps can be used on practically any shaped column form. They are made in various sizes.



THE  
M & M  
COLUMN  
CLAMP

fected a system of clamping, using a wedge which gives adjustment and continuous take-up, eliminating the use of bolts and nuts which are easily damaged by concrete, and by making each device of this system a very simple and positive clamping device.

When the wedge is driven into a slot so that the clamp does not take up any more, another wedge can be placed in the slot ahead or behind and the first wedge removed. This gives a continuous take-up. One slot is always in position so that a wedge will draw up the clamp. This take-up or adjustment is important since honey-combed concrete on the exposed face of the columns and patching concrete costs the contractor money, and in the summer when concrete forms dry out and shrink, this shrinking is taken care of immediately by the wedge system. All special tools are eliminated in this system, as all that is necessary to drive the wedge in place is a hammer or hand ax. The wedges are made of  $\frac{3}{4}$ -inch mild steel sheared from solid plates, and there is a hole punched in one end so that they can be strung on a wire when not in use.

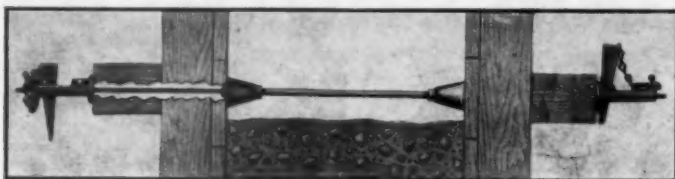
The column clamps used in this system are simple and complete and have no detachable parts to become lost. These clamps have a squaring effect to the column form, can be adjusted even when the concrete is being poured into the forms, and have ample strength under all conditions of pouring concrete. No special wrenches or other devices are needed to place or release them.



THE  
ADJUST-  
ABLE  
SHORE

at the top, and the unit consists of the clamp and wedge, the removable cone unit, and the slotted arm unit.

The third device in this system is the adjustable shore. It has a 4,000-pound working load with a factor of safety. It has a range of adjustment from 8 feet to 14 feet, 6 inches. It will lift a load in excess of 1,000 pounds by driving the wedge with a carpenter's hammer and can be used for reshoring.



THE CONCEALED TIE ROD CLAMP



# CURE *your* CONCRETE CURING TROUBLES

## **For Curing by the Integral Method**

Solvay used integrally gives quick set and greater early strength—cures uniformly throughout the entire thickness of the concrete.

With Solvay Flake Calcium Chloride in the mix you accelerate the set to such an extent that under proper control the concrete will gain sufficient strength to withstand traffic in *as short a time as 4 days*. Even under ordinary conditions the time required is only seven days.

## **—or for Surface Curing**

Where surface curing is desired, Solvay provides a remarkable advance over old-fashioned methods. Spread Solvay evenly over the surface as soon as the concrete is able to bear the weight of man. For this purpose the use of a Solvay Hand Spreader is recommended.

Solvay Flake Calcium Chloride is sold in 100-lb. moisture-proof bags and in drums of 375 lbs. net weight, from 75 conveniently located distributing centers.

Send for booklet No. 2056 "Curing Concrete Roads with Solvay Calcium Chloride"—and nearest stock point.

## **SOLVAY SALES CORPORATION**

*Alkalies and Chemical Products  
Manufactured by  
The Solvay Process Company*

40 Rector Street

New York

Boston, Syracuse, Chicago, Indianapolis,  
Philadelphia, Kansas City, St. Louis, Atlanta,  
Cleveland, Cincinnati, Pittsburgh, Detroit,

# Use



When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

## New Type Mixer Saves Wheelers' Wages

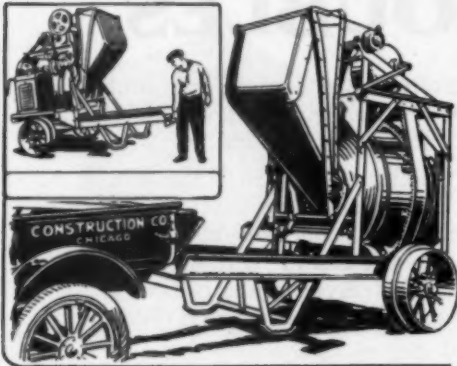
*End Discharge Type Requires Only 6 Feet of Street Space with Loader*

A NEW type 7S "Speed King," portable, all steel, one-bag mixer that has been designed particularly for contractors and builders has been brought out recently by the Jaeger Machine Co., Dublin Avenue, Columbus, Ohio. This mixer

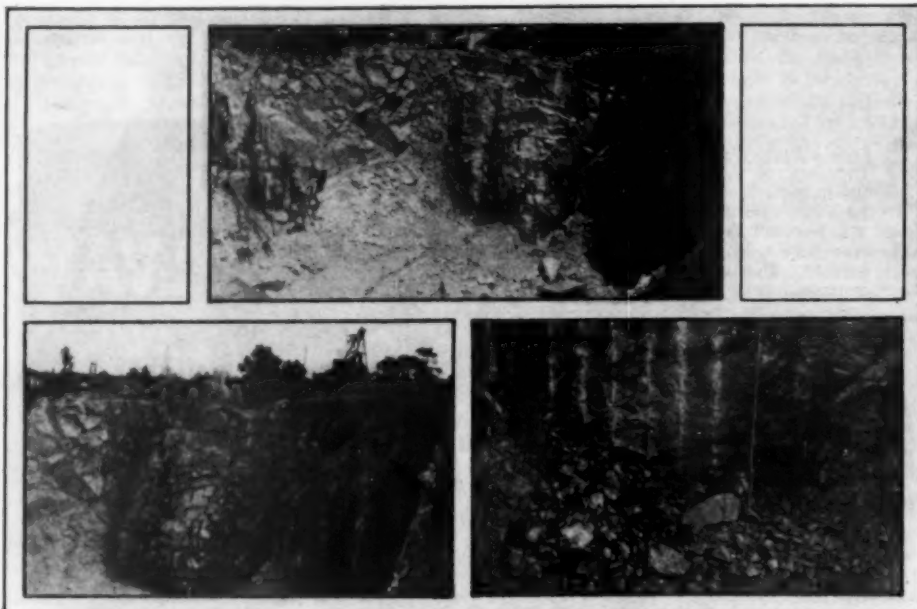
not only stands up under high speed trailing, having springs and roller bearings, with dual wheels, but is an end discharge type which has all the advantages of side discharge and, in addition, saves the wages of the wheeler on the discharge end. On large floors, walks, curb or alleys, concrete can be poured into forms and the mixer moved with the work like a paver.

More compact than usual, this mixer requires only 6 feet of street space with the loader and will work in congested streets or places. Made entirely of steel it is light and strong. It is roller bearing equipped throughout.

The mixer has been built for portability and is so balanced that one man can lift it and handle it like any ordinary small tilter trailer, and a Ford truck will tow it anywhere. It has a batch meter, and traction for moving itself along forms. A swinging spout can also be furnished for road or sidewalk contractors. It is built in low charger or loader types with accurate measure water tank. The loader has a patented "Skip Shaker" which eliminates pounding on the skip to unload. Because of its fast discharge and loader it will turn out large yardage per day.

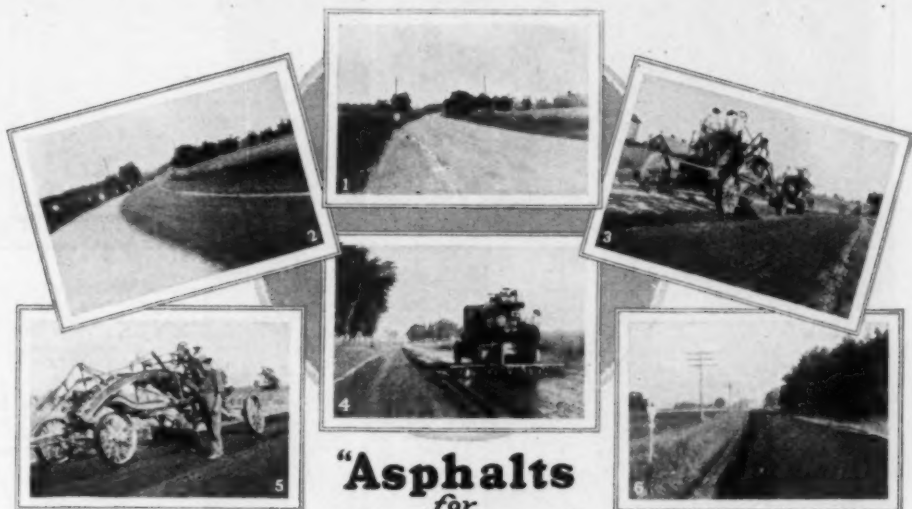


THE JAEGER SPEED KING MIXER SHOWING EASE OF MOVING



A WELL DRILL SHOT AT THE QUARRIES OF THE PALMETTO QUARRY CO., COLUMBIA, S. C.

The photograph shows the face before shooting, the rock moving and the face and part of the stone after the shot. This shot consisted of approximately 7500 pounds of 60 per cent Union gelatin. The burden, on the whole, figured 32,000 tons, the stone weighing 160 pounds to the cubic foot. The shot was made by L. D. Nichols, Explosives Division, American Hardware and Equipment Co., Charlotte, N. C., who are the southern distributors for the Union Explosives Co., Clarksburg, W. Va.



**"Asphalts  
for  
Every Purpose"**

**SURFACE  
TREATING**

*with*

***Stanolind*  
Cut-Back Asphalt**

1. Roadway before treating.
2. Application of Stanolind Cut-Back Asphalt.
3. Grading applied surface to center of roadway.

4. Making second application of Stanolind Cut-Back Asphalt.
5. Spreading and mixing wind-row of material over second application to a true, uniform surface.
6. Completed roadway.

**STANDARD OIL COMPANY**

(INDIANA)

General Offices: 910 S. Michigan Ave.,

CHICAGO, ILL.

ILLINOIS  
Chicago  
Decatur  
Joliet  
Peoria  
Quincy

INDIANA  
Evansville  
Indianapolis  
South Bend  
KANSAS  
Wichita

IOWA  
Davenport  
Des Moines  
Mason City  
Sioux City

S. DAKOTA  
Huron  
MICHIGAN  
Detroit  
Grand Rapids  
Saginaw

N. DAKOTA  
Fargo  
Minot  
WISCONSIN  
La Crosse  
Milwaukee  
Green Bay

MINNESOTA  
Duluth  
Mankato  
Minneapolis

MISSOURI  
Kansas City  
St. Joseph  
St. Louis



# A Service for You Use It

THE catalogs and pamphlets listed below are available for free distribution. Contractors and Engineers who check over these pages each month and write for such material as interests them, will find this a valuable means of keeping up to date on the subject of machinery and equipment.

## LEANING WHEEL GRADERS

Graders that are built to move dirt, that have telescopic axles and leaning wheels, and hot-riveted steel frames that hold the properly curved blade in place, are described in the catalog of The Austin-Western Road Machinery Co., 400 N. Michigan Avenue, Chicago, Ill.

## PAVING ASPHALT FOR SATISFACTORY SERVICE

Stanolind paving asphalt that gives long and satisfactory service and is used on some of the heaviest traveled streets and roads in the country, is described in literature of the Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago, Ill., that will be sent free on request.

## NEW COLUMN CLAMPS AND TIE BOLTS

A new column clamp that will solve one of your most aggravating problems in the elimination of projecting corners when used on columns greater than 18 inches, as well as form clamps and tie bolts built for service, are described in literature of the Williams National Form Clamp Co., 26 W. Kinzie St., Chicago, Ill.

## FAST 6-BAG PAYER

The 27-E 6-bag paver of The T. L. Smith Co., 1030 32nd Street, Milwaukee, Wis., that is the only single unit frame paver made, that has no superstructure or top frame, and may be shipped or driven under elevated structures, low trestles and trolley wires without dismantling, is described in catalog 409-F, which will be sent free on request.

## A RAPID TRENCH DIGGER

A rapid trench digger that eliminates short, cable-cutting bonds, that has a digging radius of 29 feet and a clear dumping height of 16½ feet, that digs to a full 16-foot depth through hard materials, and has pull shovel attachment that quickly changes to either shovel or skimmer booms, is described in the new catalog of the Speeder Machinery Corp., 1215 So. Sixth Street, W., Cedar Rapids, Iowa.

## A NEW WATER TANK FOR CONCRETE MIXING

An accurate measuring, easy operating, fast discharging water tank for concrete mixing, that is simple in design and that gets the water into the mixing drum quickly and the proper amount at the right time, is described in literature which the Construction Machinery Co., Waterloo, Iowa, will send on request.

## NEW MACHINE FOR RECLAIMING BRICK

A new machine for the reclaiming of ordinary building brick and paving brick, that removes the scale from refractory and regenerative brick, mortar and cement from paving and house brick, and may also be used for cleaning skew backs and the general shaping of brick, that has a dust proof motor and is mounted on a truck, is described in literature of The Rotor Air Tool Co., Cleveland, Ohio.

## A PORTABLE TURBO-GENERATOR

A new 2½ kw. heavy-duty, portable turbo-generator, Type M-2-S, which is completely self-contained, and is suitable for use under the most adverse conditions in furnishing current flood lights, or power for portable tools, is manufactured by the Pyle-National Co., 1334-1358 North Kostner Avenue, Chicago, Ill., and described in their literature and catalogs.

## A NEW LINE OF HYDRAULIC JACKS

Circulars and literature on a line of hydraulic jacks using oil as a lifting medium, in capacities of 1½ to 75 tons, that have few working parts and give positive raising, lowering and holding loads, that operate in cramped places and require little effort in operating, will be sent free by the Blackhawk Mfg. Co., Milwaukee, Wis.

## SHOVEL-DRAGLINE CRANE

Bulletin No. 320 of The Marion Steam Shovel Co., Marion, Ohio, describes and illustrates the Type 7, 1-yard, straight gas shovel, dragline and crane, equipped with Hercules engine, Timken bearings, Dot lubrication, outside hand clutches, gear or rope crowd, and other profit-making features.

## A STURDY PORTABLE TRENCH PUMP

A portable lift and force trench pump designed for general drainage duty that is sturdy and compact, has suction lift, discharge head and plenty of capacity, and that also lends itself to a variety of applications, is described in literature which The Humphries Mfg. Co., Mansfield, Ohio, will send on request.

## A NEW LIGHT-DUTY DUMP UNIT

Bulletin No. 161 describes Model 92 of The Heil Co., 1243 26th Avenue, Milwaukee, Wis., which is a light-duty dump unit, the body being motivated by a Heil hand hoist and equipped with full length hinged sides to facilitate hand loading, double acting tailgate with manual control, sliding door, and is made in 7- and 8-foot lengths, 4 feet wide and 26 inches high.

## A NEW SUBGRADE TESTER

A new subgrade tester with a clean-up blade in front of it and the test template on a separate wheel so that the vertical movements of the trail grader will not lift it off the forms, has been developed by Ted Carr & Co., 939 W. North Avenue, Chicago, Ill., and is described in free literature available on request.

## A SKIMMER FOR REPAVING

For economical street repaving, the heavy 36-yard skimmer of the Keystone Driller Co., Beaver Falls, Pa., with 14 feet of level, perfectly controlled, horizontal crowd, will peel off the old worn surface and leave the sub-grade undisturbed. Literature describing this skimmer will be sent free on request to interested contractors and engineers.

## BELT CONVEYOR MANUAL

Contractors and engineers will find the 144-page Belt Conveyor Data Book No. 615, published recently by the Link-Belt Co., 910 S. Michigan Avenue, Chicago, Ill., of very practical use. It is a combined catalog and hand book that gives new data on various belt conveyor drives handling all sorts of materials under a variety of operating conditions.

## WOOD AND STEEL TANKS AND TOWERS

The W. E. Caldwell Co., Inc., Louisville, Ky., has issued a booklet describing this company's complete line of wood tanks, tank agitators, riveted and welded steel tanks, as well as many other styles of tanks, piping and accessories.

## BLAST HOLE DRILLS

Sparta drills which are designed to make fast work with least possible fuss and thereby save money on construction work, are described in a catalog which may be secured free on request from the Burkhardt Co., Kiel, Wis.

## HYDRAULIC HOISTS FOR DUMP TRUCKS

Contractors interested in efficient dumping equipment with high dumping angle and low mounting for trucks, should write to the Hydraulic Hoist Mfg. Co., St. Paul, Minn., for copies of its literature describing St. Paul hydraulic hoists.

## LESS POWER LOSS ON SHOVELS

An instructive and interesting booklet has been published by The Thew Shovel Co., Lorain, Ohio, which describes, illustrates and gives a list of owners of shovels that embody center drive shovel truck, center drive power transmission, center drive boom, tilting bucket trench hoe and that have a minimum of power loss. Bulletins 75A and 60 are also available to interested contractors.

**Now!**  
SERVICE BOXES  
WITH STAY-ON  
COVERS

*Just what you have been  
waiting for . . . Inter-  
changeable with  
"Buffalo" boxes . . .*

Ask for MONITOR  
SERVICE BOX  
catalog.



**Easier**  
TO HANDLE  
**Quicker**  
JOINT-MAKING  
**Safer**  
IN SERVICE !

**UNIVERSAL CAST IRON PIPE**

No bell holes to dig: No joints to calk

**THE CENTRAL FOUNDRY COMPANY**

*Subsidiary of The Universal Pipe and Radiator Company*

Graybar Building, 420 Lexington Avenue

Chicago    Birmingham    New York    Dallas    San Francisco

**Here's** DEPENDABLE WATER supply for you—it's Universal Cast Iron Pipe. No hot lead, no cold lead, no lead substitutes, no pouring, no calking. Wrenches were the only tools used in making these tight, flexible, dependable joints—machined iron-to-iron joints as tight as the wall of the pipe itself.

Laid anywhere in any season. Thousands of miles installed every year—much of it by common labor—for water supply, fire protection, sewage disposal and other services. Ask our nearest office to show you.

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.



**NEW DOUBLE BATCH HOPPER LOADERS**

Write to the George Halsa Mfg. Co., Inc., 142nd Street and Park Avenue, New York, N. Y., for information and illustrations regarding double batch hopper loaders for use with 2-batch trucks that dispatch the trucks faster, saving 20 to 30 seconds at the stone and 15 to 20 seconds at the sand.

**TRACTOR SHOVELS FOR EXCAVATION WORK**

Bulletin 27 of the Bay City Dredge Works, Bay City, Mich., describes and illustrates the 10-B  $\frac{3}{4}$ -yard convertible excavator with five convertible buckets, International tractor and full crawlers, that is fast moving and operating, and economical.

**THE LONG AND SHORT OF IT IN GRADERS**

This is the title of a new leaning wheel grader catalog of the Austin Mfg. Co., Chicago, Ill., in which all the new features of graders with telescopic rear axles, Timken tapered roller bearings and alemitte lubrication are fully illustrated and described.

**A SELF-LOADER FOR FORD TRUCKS**

Arps's rapid self-loader for Ford trucks is a 7-cubic-foot scoop attached to the truck and operated by a power take-off. Full details and prices regarding this loader which will load a yard of material in two minutes, may be secured from the F. S. Manufacturing Co., Inc., New Holstein, Wis.

**LOWER HOISTING COSTS**

A booklet recently published by the Novo Engine Co., 216 Porter St., Lansing, Mich., is a collection of hoisting jobs from all over the country on all kinds of work and gives in detail facts and figures which point the way to better, cheaper hoisting methods.

**POWER, TRACTION AND ECONOMY IN TRACTORS**

The 2-ton Trackson full-crawler with a one-man Fordson grader that is of all-steel construction, has few working parts and low upkeep cost, patented non-clogging track, less ground pressure and greater track area, is described in literature of the Trackson Co., 519 Clinton St., Milwaukee, Wis.

**SAFE, STRONG SCRAPERS**

An illustrated circular describing scrapers that are safe, strong, economical and easy to operate, since loading, dumping, spreading and leveling are controlled without moving from the driver's seat, will be sent free on request, by the Gustav Schaefer Wagon Co., 4180 Lorain Avenue, Cleveland, Ohio.

**HIGHER FILLING SPEED WITH LOWER CABLE WEAR**

Model 32 trench back-filler with the patented Fairlead that is mounted on a full revolving swivel that swings instantly to present full sheave surface to the cable, increasing the life of the cable and lowering operating expenses, is described in literature of The Parsons Co., Newton, Iowa.

**A FAST REVOLVING CRANE AND EXCAVATOR**

A powerful, fast, full revolving crane and excavator, the "Groundhog," in  $\frac{3}{4}$ -cubic-yard capacity, with a 50-horsepower motor, line speed of 155 feet per minute, and attachments that convert it into a shovel, dragline, clamshell, crane, pile driver, etc., is described in literature of the Harnischfeger Corporation, 38th and National Avenues, Milwaukee, Wis.

**A DOUBLE DRUM, 3-SPEED, AUTOMOTIVE HOIST**

Bulletin No. 24 of the Ersted Mfg. Co., Portland, Ore., describes and illustrates Ersted automotive hoists with Universal, Type S. F., double drum, 3-speed hoisting engines with 5,000 pounds capacity, powered with Model "T" Ford engine, self-starter equipped, that have strength and capacity, durability and efficiency for the hardest construction jobs.

**CYLINDRICAL STOPPERS FOR WATER MAIN REPAIR**

A cylindrical stopper for use in water main, sewer, drain and gas pipes to hold back leakage when making connections with or repairs to old mains when the gate valves leak, that will hold back a water pressure of 10 pounds on sizes up to 20-inch pipe, is described in pamphlets of the Safety Gas Main Stopper Co., 523 Atlantic Avenue, Brooklyn, N. Y.

**A FREE CONCRETE AND LUMBER SCALE**

The Pennsylvania-Dixie Cement Corp., 131 East 46th St., New York, N. Y., and James Bldg., Chattanooga, Tenn., will be pleased to send to contractors requesting it one of its concrete and lumber scales containing valuable data for the use of contractors and road builders.

**A NEW SNOW PLOW CATALOG**

The LaPlant-Choste Mfg. Co., Inc., Cedar Rapids, Iowa, has just issued a new snow plow catalog describing LaPlant-Choste snow plows to fit all sizes and makes of trucks, which it will be pleased to send to interested contractors.

**A BITUMINOUS PAVEMENT SAMPLING SET**

The Riehle Bros. Testing Machine Co., Philadelphia, Pa., will be pleased to send copies of its leaflet describing the compact Riehle-Howe bituminous pavement sampling set to any contractors or engineers interested in equipment which makes it possible to easily secure sample cores from all types of bituminous pavements.

**BAND SAWS, SAW RIGS AND HOISTS**

Details regarding American band saws, saw rigs and hoists manufactured by the American Saw Mill Machinery Co., 171 Main St., Hackensack, N. J., will be sent on request to any contractor interested in the savings which may be effected through the use of this equipment.

**PORTABLE CONVEYORS**

Northern portable conveyors in any length up to 100 feet and mounted on truck or furnished for suspension, as well as Northern Star cement bag cleaners and portable steel hoppers, are manufactured by the Northern Conveyor & Mfg. Co., Janesville, Wis., and described in Bulletins which they will gladly send on request.

**ELECTRIC HAND SAWS**

Information regarding Wodack saws which are claimed to be the lightest electric hand saws on the market with 4-inch cutting capacity and able to stand up under heavy work, as well as the new Wodack combination lock mortiser and router, may be secured without obligation from F. L. Rogers Co., 29 South Jefferson St., Chicago, Ill.

**A NEW GRAVEL SCRUBBER**

Bulletin A.W. 21 describing the new Telsmith-Ajax washer operated on the ball mill principle in which the large rocks pound and grind the clay balls into a paste so that they are easily and quickly washed out, may be secured from the Smith Engineering Works, 1820 Holton St., Milwaukee, Wis.

**A RUGGED, POWERFUL TRUCK FOR ROAD BUILDING**

A rugged, powerful truck, Model T-20, designed especially to meet the most severe requirements of highway construction work, with a chassis also for every haulage need and a lower cost per ton mile, a capacity of 4,000 pounds, a 49-horsepower, 4-cylinder Ricardo head truck engine and 10-ply pneumatic cord tires, is described in free literature which may be secured from J. M. Howard, Federal Motor Truck Co., Detroit, Mich.

**AN EFFICIENT, ECONOMICAL PIPE CUTTER**

A tool for efficient and economical cutting of pipe in or out of the ditch is being manufactured by the Ellis & Ford Mfg. Co., Detroit, Mich. It is a quick and safe means of cutting exactly where and when the cut is desired, is made in sizes for 4 to 12-inch pipe, and is described in a circular of the company which will be sent free to contractors and engineers.

**A POWDER BAG FOR CARRYING HIGH EXPLOSIVES**

A powder bag for the economical, safe and practical carrying of high explosives from storage to the working face of mines, quarries and construction work, that is made of specially treated fabric which is waterproof and resistant to fungus, dry rot, acid waters, and vitiated air, that is a non-conductor of electricity and carries from 50 to 125 sticks of dynamite, is described in literature of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

**A NEW PORTABLE OIL BURNER**

A new torch type portable oil burner unit that has recently been put on the market by Littleford Bros., 485 East Pearl St., Cincinnati, Ohio, and that provides at a very low cost an intense heat which is easily and quickly controlled and adjusted, is described in literature which is free on request.

**PORTABLE ROAD ASPHALT PLANTS**

The literature of the Charleroi Iron Works, Charleroi, Pa., describes the Doorley portable road asphalt plant consisting of three parts, drying and mixing units, power and kettles and made in capacities of 450, 850, 1500 and 2000 square yards of 2-inch top per day.

**AN AUTOMOTIVE HOIST FOR THE FORDSON**

The Allison-Willamette automotive hoist for attaching to a Fordson tractor and which furnishes cheap, dependable power for hoisting concrete, backfilling, pile driving and pulling down concrete forms, is described in literature which may be secured without obligation from the Willamette Iron & Steel Works, Portland, Ore.

**MIXERS AND OTHER CONTRACTORS' EQUIPMENT**

The John Lanson Mfg. Co., 11 Jackson St., New Holstein, Wis., will be pleased to send complete information and prices on its  $\frac{3}{4}$ -foot concrete mixers, plaster and mortar mixers, contractors' saw rigs, gas engines for all purposes, heavy-duty power units, and diaphragm units with fully enclosed jack for use with any make of pump.

FOR JOB-DRY MATERIALS	BAGS = CEMENT CU YDS = SAND CU YDS = STONE	7.50 5.50 4.50
FOR DAMP MATERIALS	BAGS = CEMENT CU YDS = SAND CU YDS = STONE	7.50 5.50 4.50

**PROPORTION (MIX)**

BAGS = CEMENT	1
CU YDS = SAND	2 1/2
CU YDS = STONE	4

**THICKNESS IN INCHES**

BAGS = CEMENT	1	2 1/2	4
CU YDS = SAND	2 1/2	4	5
CU YDS = STONE	4	5	6

**CONCRETE**

**FOR PERMANENCE**

**PENN-DIXIE CEMENTS**

**FOR SERVICE-SAFETY**

**BUY AT PENN-DIXIE SIGNS**

CLEAN GRADED SAND AND STONE OR PEBBLES 1/4" TO 3/4" IN QUANTITIES AS GIVEN ABOVE ARE REQUIRED FOR:

**ONE CU. YARD OF FRAMED CONCRETE**

ONE BAG OF CEMENT = 1 CU. FOOT  
ONE BAG OF CEMENT WEIGHS 94 LBS. NET  
ONE BARREL OF CEMENT = 4 BAGS

QUANTITIES ABOVE ARE THOSE REQUIRED FOR:

**100 SQ. FT. OF WALL OR FLOOR OF THICKNESS SHOWN**

WITH PROPER BRIDGING, CURING AND TEMPERATURE CONDITIONS, WATER AS SHOWN PER BAG OF CONCRETE LEFT WILL GIVE SUFFICIENT STRENGTH. THE COMPRESSIVE STRENGTH OF SUCH CONCRETE AT 28 DAYS IS APPROXIMATELY 3000 LBS. PER SQ. INCH. 1000 LBS. PER 14 GALL. AND 1000 LBS. PER 8 GALL. OF WATER PER BAG. INCREASE WATER FOR STIFFER MIXTURES. INCREASE AGGREGATE FOR MORE WORKABLE MIX. (EXEMPTIONS: BRIDGE, SLURRY, SOLID, STRUCTURE. YOU CAN SAVE MONEY ON LARGE WORK BY ORDERING SET FOR MATERIALS TO BE USED. DATA ON THIS RULE ARE FOR AVERAGE CONDITIONS.

ACTUAL SIZE REPRODUCTION OF CONCRETE AND LUMBER SCALE

ASK FOR ONE—THERE IS NO CHARGE

# PENNSYLVANIA-DIXIE CEMENT CORPORATION

131 EAST 46TH STREET  
NEW YORK CITY

JAMES BUILDING  
CHATTANOOGA, TENN.

OFFICES AND SALES REPRESENTATIVES THROUGHOUT  
THE EAST AND SOUTH

FOR ACCURATE MEASUREMENTS

## LUFKIN TAPES

THE RECOGNIZED STANDARD  
A PATTERN AND GRADE FOR EVERY PURPOSE  
SEND FOR CATALOG

**THE LUFKIN RULE CO.**

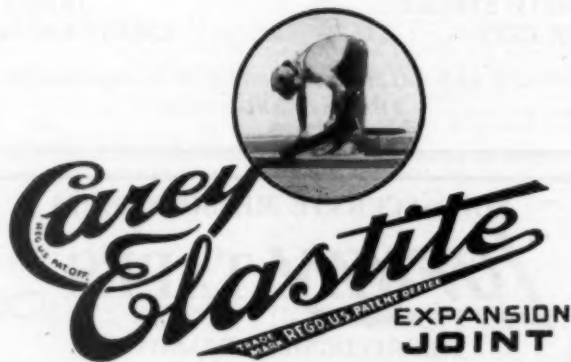
SAGINAW, MICH. NEW YORK



Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# The use of CAREY ELASTITE EXPANSION JOINT is advocated by leading construction engineers today

---



THE PHILIP CAREY COMPANY

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



*because:*

---

—it absorbs expansion and contraction, prevents over-stresses in the structure, protects concrete against breakage, and extends its length of service.

---

—it will not melt in hot weather, nor will it become brittle in winter. It lasts as long as the concrete.

---

—it reduces maintenance expense and adds but a trifle to the cost of construction. Conveniently installed, for the preformed strips are as easy to handle as a board.

---



CAREY Elastite Expansion Joint consists of a heavy body of fibrous asphaltic compound between two substantial layers of asphalt-saturated felt. Made in preformed strips, in widths, lengths, and thicknesses as desired. Have us give you full particulars.

Lockland, CINCINNATI, OHIO

---

# WILL YOU CONTINUE OF UNCERTAIN LIFE IS

There is only one make of wire  
rope on the market that  
proves its grade

## WILLIAMSPORT

No man who uses wire rope  
should be expected to risk his life  
or endanger others with wire  
rope the grade—tensile strength—  
of which is not definitely known.

### WILLIAMSPORT WIRE ROPE CO.

*Main Office and Factory:*  
WILLIAMSPORT,  
PENNA.

*General Sales Offices:*  
122 So. Michigan Ave.  
Chicago, Ill.



# TO BUY WIRE ROPE GRADE WHEN YOUR AT STAKE?

This proof is established by the  
Telfax Tape System, and marks  
each grade in plain English.

Remember the name---

## W I R E R O P E

If you are interested in using wire rope  
that will give you long, enduring service,  
plus a protection that is worth more than  
the rope costs, send this coupon today for  
full facts about WILLIAMSPORT.

Williamsport Wire Rope Co.  
122 So. Michigan Ave., Chicago.

- ☐ Send me one of your souvenir pencils
- ☐ Quote on .....
- ☐ Send us more facts about your ropes

Signed .....

Address .....

Title .....

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.



**NEW!**  
**THE FLORY "CUB"**

**A BRUTE FOR  
STRENGTH AND POWER**

Single or double drum,  
8-10 H.P. Powered by  
two-cylinder Le Roi Mo-  
tor. Pulls 1500 pounds  
at 125 feet per minute.  
Chain drive, cut gears,  
asbestos friction, and  
asbestos-lined two-piece  
brake.

*Send for bulletin 1524*

**S. FLORY MFG. CO.**

**BANGOR, PA.**

**SALES AGENTS IN ALL PRINCIPAL CITIES**



**Kinney**  
TRADE MARK  
REG. U.S. PAT. OFF.

**AUTO HEATER  
& DISTRIBUTOR**

**More Miles Have Been Covered by the KINNEY Distributor  
than by any other heater and distributor in the world.**

**The KINNEY Heater and Distributor**

will properly heat and apply the heaviest asphalts and tars as well as the  
lighter grades of bituminous road material with equal efficiency and with  
the least expenditure of time, labor and money.

Equipped with the Kinney Positive Pressure Pump and the Kinney Spraying  
Nozzles and circulating and heating systems. Self-loading from tank cars.

*Write for Booklet*

**KINNEY MANUFACTURING COMPANY**

**BOSTON, MASS.**

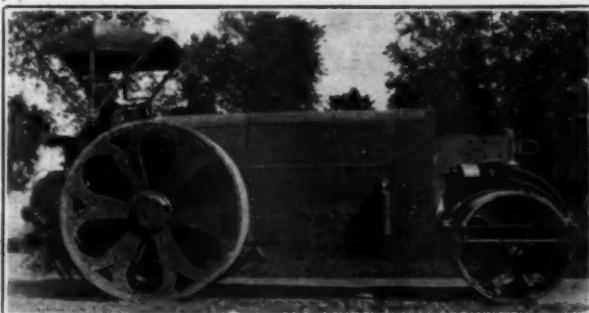
Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

# FOUR CYLINDER **HUBER** MOTOR ROLLER

FOUR SIZES—5-7-10-12 tons—plus unusual dependability—plus every factor that makes for extraordinary performance—these are the things that you get in the Huber 4-Cylinder Motor Rollers. An unbeatable combination is presented—no vibration—no shifting of gears—speed—clear vision—economy.

*Write for fully descriptive literature*

**5-7  
TONS**

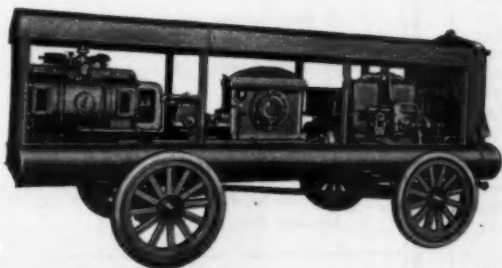


**10-12  
TONS**

*Send for Catalogs*

**THE HUBER MANUFACTURING CO.**  
308 East Center St. Marion, Ohio

## **FOR DRILLING— “GUNTING”— CHIPPING—**



**THE TRAYLOR 12" x 10"  
PORTABLE COMPRESSORS**

**HORIZONTAL TYPE — DOUBLE  
ACTING — SLOW SPEED — LARGE  
CAPACITY — HIGH EFFICIENCY —  
LONG LIFE—LOW UPKEEP.**

**Will Operate Five “Jackhamers”—Want to Know More About It?**

*Send the Coupon—Now!*

**CEMENT-GUN COMPANY, Inc.**  
Allentown, Pa.

New York      Pittsburgh      Chicago  
Denver      Salt Lake City  
San Francisco      New Orleans      Buffalo

Cement-Gun Co., Inc.	Date.....
Allentown, Pa.	
Please send full information on the TRAYLOR PORTABLE COMPRESSOR. <input type="checkbox"/>	
I would like to have your representative call. <input type="checkbox"/>	
Name .....	
Address .....	
City .....	State .....

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## The New ROME High-Lift SCARIFIER GRADER

is a combination of an efficient scarifier with all of the patented features of the regular ROME GRADERS.

They are constructed for the rapid and efficient building of new, or the reconditioning of old roads. They have weight, balance and a rugged strength, so necessary in a road machine of this kind.

The scarifier attachment is built into the Grader in such a way that it can be operated independently of the blade with workable clearances in all directions.

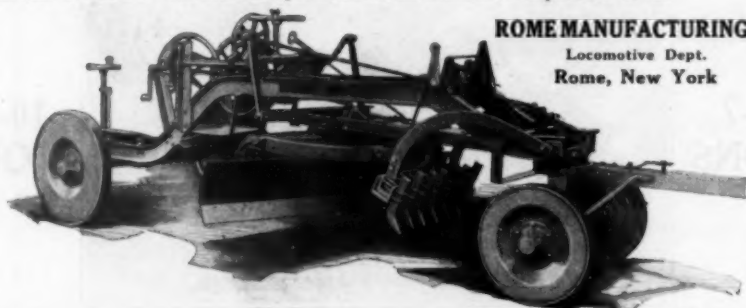
The ROME SCARIFIER GRADER will tear up and regrade in a single operation an old worn-out road or rough subgrading. It is a machine particularly adapted for all-round road building and repair.

The best of its kind—The reason why:—Built in the Locomotive Department of the

**ROME MANUFACTURING CO.**

Locomotive Dept.

Rome, New York



# ROME

Patented  
HIGH  
LIFT

# GRADERS

## Make Big Money With Little Sullivan Hoists



How much money could you make with a 345-lb. portable hoist that would lift a ton or pull a 50-ton car? That's the Sullivan "Turbin-air." Use it for hoisting materials, placing structural steel and stone, operating derricks, or pulling drag scrapers. Air, steam, or electric power.

Write for the picture book, "Handy Hoisting and Hauling."

# SULLIVAN

Sullivan Machinery Company  
163 So. Michigan Ave. Chicago

Branches and Dealers in all principal cities

## WARRENITE-BITULITHIC PAVEMENT

—A WARREnted Product—

The measure of a progressive city

It may be just as wrong to judge a city by its roads as it is to judge men by their clothes,—but it is done—and done often.

**WARREN BITULITHIC PAVEMENT**

insures good opinions on first acquaintance and it builds opinions into convictions as the quality of its service becomes known.

### WARREN BROTHERS COMPANY

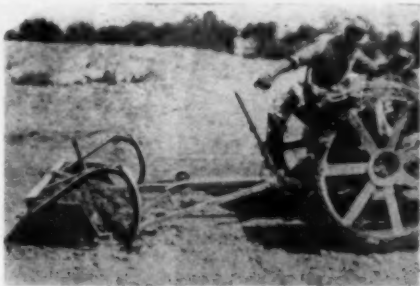
International Highway Engineers and Contractors

Executive Offices: Boston, Mass.

#### DISTRICT OFFICES

Havana, Cuba	Washington, D. C.	Charlotte, N. C.
New York, N. Y.	Utica, N. Y.	Sydney, Australia
Portland, Ore.	Minneapolis, Minn.	Buenos Aires, R. A.
St. Louis, Mo.	Oakland, Cal.	Tokyo, Japan
Harrisburg, Penn.	Toronto, Ont.	Melbourne, Australia
Vancouver, B. C.	Memphis, Tenn.	Oklahoma City, Okla.
Chicago, Ill.	Los Angeles, Cal.	Salt Lake City, Utah
Phoenix, Ariz.	New Orleans, La.	Birmingham, Ala.
	Dallas, Texas	

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.



## DUMPING, SPREADING and LOADING

are easy with the

### SCHAEFER One-Man Tractor Scraper

It's all so simple:—To load the scraper, just give the loading rope a slight pull. This tilts the blade into the ground. To dump, pull the trip lever forward, thus releasing the catch. To spread the earth instead of dumping it, engage the trip lever against either of two extra stops in the drawbar. All operations are easily controlled from the driver's seat. Our illustrated circular will tell you why earth-movers everywhere prefer the SCHAEFER.

Write for it today

**The Gustav Schaefer Wagon Co.**

4180 LORAIN AVENUE

CLEVELAND, O.

## YOUR FIRST CONCERN IS — WATER —

Either you NEED it for the shovel or mixer and haven't got it, or you've GOT IT in a hole or a trench where you don't want it.

If you need a never-failing supply of water a "Domestic" GIANT self-oiling Triplex is the pump outfit you are looking for.

Built for capacities 80, 100 and 150 gallons per minute.



"Domestic" 35-A GIANT Road Pump Unit



"Domestic" DL-4 Diaphragm Pump Unit

To rid that job of excess water the "Domestic" new improved self-oiling, enclosed engine type Diaphragm Pump Unit is your "best bet." They get the water out of the hole in a "jiffy" and keep the trench or foundation absolutely dry.

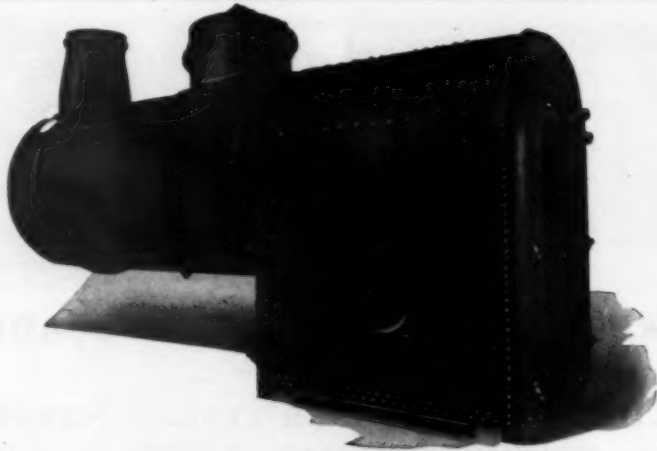
Built in single and double pump types—capacities 8,000 to 24,000 gallons per hour.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_

State \_\_\_\_\_  
**DOMESTIC ENGINE & PUMP CO.,**  
SHIPPENSBURG, PA.  
Mail us at the above address complete  
descriptive literature covering all  
Domestic Triplex Road Pumps  
"Domestic" DL-4 Diaphragm  
Pumps  
CEM  
11-27

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.





*Have you a boiler problem?*

## **JOHNSTON BROS., Inc.**

*Specializing in Boilers for Contractors' Equipment*  
**FERRYSBURG, MICHIGAN**



## **DOBBIE**

### **Derricks and Winches**

Complete Stock of Fittings and  
 Winches on hand at all times.

*Write for our complete Catalog No. 22.*

**Dobbie Foundry & Machine Company**  
 Niagara Falls, N. Y.



**12,000 USERS**



## **The AUTOMATIC PORTABLE CONVEYOR**

WITH THE

Non-Clogging Receiving End  
 FOR

Every Conveying Purpose

**CHICAGO AUTOMATIC  
 CONVEYOR COMPANY**

*Originators of the Portable Conveyor*  
 998 Old Colony Bldg. **CHICAGO**

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

# Performance



**FOURTEEN** 7-ton Whitcomb Gasoline Locomotives were used for hauling on a recent record-making 30-mile road job in North Carolina.

These "Whitcombs," operating over long continued 20-hour daily periods, hauled fifteen to twenty 3-ton loaded cars on hauls up to  $6\frac{1}{2}$  miles in length.

Such long runs and heavy loads require real operating efficiency—quick starting and stopping, switching and spotting. They work continuously for 20 hours, with very low gasoline consumption and a minimum of maintenance. It is little wonder that users of haulage equipment accept Whitcomb lowest-cost haulage tools for every need when performance of this kind is guaranteed.

Avail yourself of "more horsepower per ton of weight" and the Whitcomb guarantee of maximum operating efficiency. Our haulage experts will gladly show you these advantages in actual operation—your inquiry brings their services gratis.

**GEO. D. WHITCOMB COMPANY**  
Rochelle, ILLINOIS

OFFICES IN PRINCIPAL CITIES



## TWIN BACKFILLER

**BACKFILLS  
SHOULDERS-ROADS  
CLEANS DITCHES  
EXCAVATES**

On any contract where you can use one or two scrapers this machine will pay for itself.

This unit mounted on a Fordson has made many friends—because of its many uses—because it stands up and does its work under all conditions—and because it **SAVES REAL MONEY.**

*Let us send you our catalog*

**THE WATERMAN CORPORATION**  
687 East Fort Street Detroit, Mich.

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

**ERSTED**  
All Steel **Automotive**  
**HOISTS**

**3**  
SPEED

worth more...  
cost less...  
than ordinary hoists!

Ersted Manufacturing Co.  
927 Clackamas Street  
Portland, Oregon

Dealers  
in 30  
principal  
cities



Type S.F.  
20-h.p.; cap'y to  
4000-lbs. line pull!  
Weights only 1900 lbs.!

Write for Catalog Today!

1271

## Simplex Trench and Sewer Braces

Equipped with the Safety  
Unbreakable 3-Way Nut



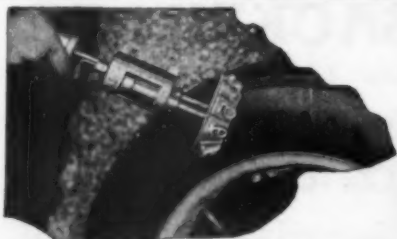
The Simplex 3-way nut is safer than the old-style wing nut—more compact and durable—occupies less space and can be used more readily in close quarters.

Can be easily applied to any standard trench brace to replace broken wing nuts.

Write for Descriptive Bulletin

**Templeton, Kenly & Co., Ltd.**  
Chicago, Illinois

Mfrs. of the Quality Simplex Lifting Jacks



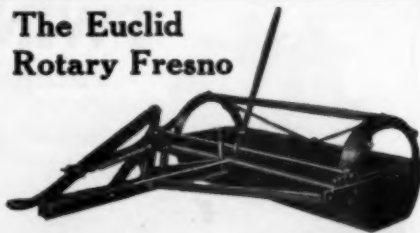
## An Invisible "Tire Lock"

Stronger than chains, and more potent than the most powerful mechanical lock—Brand your tires with an Everhot Tire Branding Outfit and you can dispense with all other kinds of so called protection which don't protect.

Write for full details and prices

**EVERHOT**  
America's Brand Makers  
**EVERHOT**  
MANUFACTURING CO. MAYWOOD, ILLINOIS

## The Euclid Rotary Fresno



### Outstanding Euclid Features:

**Capacity Durability Ease of Operation**

An extra deep bowl with a high draw-bar clearance gives the Euclid more than the ordinary Fresno capacity.

Heat-treated alloy-steel in shoes and blade gives long life to these parts. The heavy draw-bar of steel channel and tube construction and the well braced bowl give excess strength. The Euclid Fresno is built in sizes to suit every tractor from the Fordson to the largest crawler.

Only two short, light pulls on the trip lever are required for operation: one for loading, and one for dumping. The scraper loads without holding onto the lever and the cut releases automatically.

Write today

Ask for the new earth-moving equipment folder which gives all information on the complete Euclid line.

**The Euclid Crane & Hoist Co.**  
108 Chardon Rd. Euclid, Ohio

# American Steel & Wire Company's

## WIRE FABRIC

"The Steel Backbone for Concrete"



## Making City Street and Country Highway Permanent

TO reinforce concrete roads with Wire Fabric makes them permanent and is a proven economy. This fact is conclusively brought out in the report of the Highway Research Board, National Research Council.

Made of cold drawn high tensile strength steel, Wire Fabric has proved itself the perfect slab reinforcement. It gives the most effective distribution of steel—the closely spaced wires insuring greatest binding strength, holding the slab together as a solid unit and preventing the development of cracks.

Wire Fabric means permanent reinforcement—longer concrete life—lower maintenance costs. It is furnished in sheets cut to definite size which are easily handled and placed.

### SALES OFFICES

CHICAGO.....	209 So. La Salle Street	NEW YORK.....	34 Church Street
CLEVELAND.....	Bankers Building	BOSTON.....	189 Franklin Street
DETROIT.....	First of Five Store	PITTSBURGH.....	First Building
CINCINNATI.....	Union Trust Building	PHILADELPHIA.....	Widener Building
KANSAS CITY.....	St. Paul Bank Bldg., St. Paul	ATLANTA.....	181 Madison Street
ST. LOUIS.....	106 Olive Street	Worcester.....	94 Grove Street
LONG BEACH.....	417 Grand Avenue	BALTIMORE.....	31 So. Charles Street
OKLAHOMA CITY.....	First Nat'l Bank Bldg.	BUFFALO.....	476 Ellicott Street
MINNEAPOLIS.....	Sevens-Hart Bldg.	WOLFE-BARR.....	Millers Bank Bldg.
MEMPHIS.....	Union and Phoenix Bank Bldg.	SAN FRANCISCO.....	Bank Bldg.
DALLAS.....	Prudential Building	LOS ANGELES.....	209 E. Street Ave.
INDIANAPOLIS.....	First National Bank Bldg.	PORTLAND.....	606 & Alder St.
SALT LAKE CITY.....	Wahler Bank Bldg.	SEATTLE.....	448 Ave. So. & Corn. E.

\*United States Steel Products Company

# Clamps

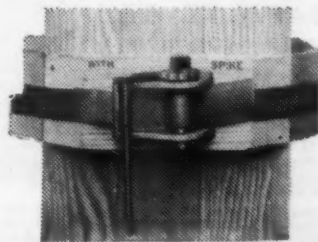
What do you ask  
for in a  
**CLAMP?**

One that's easy to put  
on and take off?

That saves time on  
any job?

That will last for a long  
time, and that you can  
use over and over  
again?

Then write for the  
W.A.K. circular. It de-  
scribes just the CLAMP  
you are looking for.



**W.A. Kuhlman & Co.**  
Toledo, Ohio

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

# Put DOWFLAKE right in the Mixer

Now You Can  
Cure Concrete  
As You Mix It!



The method of incorporating the curing agent right in the mixer has come into common use in a very short time.

By putting this curing agent into every mixer batch in the form of a solution you cure the pavement when you mix it. You automatically do away with every form of surface curing—earth or straw covering, watering, ponding, yes even the more recent method of distributing Dowflake on the surface.

Write today for your revised book "How to Cure Concrete."

THE DOW CHEMICAL CO., Midland, Michigan  
Branch Sales Offices: 90 West St., New York City  
Second and Madison Sts., Saint Louis.



## DIXON'S WATERPROOF GRAPHITE GREASE

The graphite is the vital element, for it imparts to bearing surfaces a remarkable smoothness that relieves the grease of a very considerable portion of its task of keeping metallic bearing surfaces apart and takes upon itself the wear which would be borne by the metal. The flake graphite increases both the efficiency and endurance of the lubricant.

Dixon's Waterproof Graphite Grease is of dense consistency, suitable for general heavy service with slow speeds and heavy pressures.

It possesses a remarkable adhesiveness and cannot be washed off, even by running water, sea water, or alkaline and sulphuric mine water. It cannot gum or become rancid. As a rust preventive it is unsurpassed.

Write for Circular 148-W.

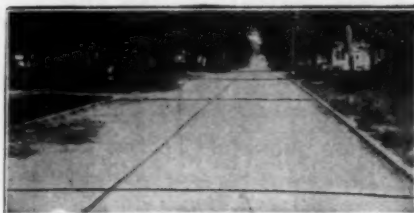
JOSEPH DIXON CRUCIBLE CO.

Jersey City



New Jersey

1827 — One Hundredth Anniversary — 1927



Permanent Protection Against  
CRUSHING and SPALLING

## SEALRIGHT

The Perfected Joint

When you install Sealright Expansion Joints, they're there to stay as permanent protection against crushing, spalling and general deterioration of the road. Sealright stays in the joint—does not run out at the top.

Sealright is made of high-grade pure blown petroleum asphalt and a long flexible vegetable fibre filler.

It adheres to the sides of the slabs, sealing the joint perfectly against the entrance of water, sand and pebbles.

Because of the special quality fibre filler, Sealright does not shatter when handled in winter nor bend out of shape in summer.

Make the Road Right—Use "Sealright"

**W. R. MEADOWS, Inc**

Elgin

-:-

Illinois



"Clings to Metal"

## A Densified Pennsylvania Oil

FOR

Displacing old-fashioned and inefficient cup greases and gear compounds

## "D-A" Lubricant

is especially adapted for use on heavy-duty machinery and is sold by distributors of this type of equipment everywhere

**D-A LUBRICANT CO., Inc.**

Plant and Home Office:

**INDIANAPOLIS - - INDIANA**

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.





2 of the 10 Brookville-Fordson Locomotives owned by The Necaro Co.

## 10 BROOKVILLES

used by

**THE NECARO CO.**

of Brooklyn, N. Y.

Seven 4-ton "FCR" with three speed reverse on one job—a sewer contract at Jamaica, L. I.

Hauling dirt and supplies and running concrete.

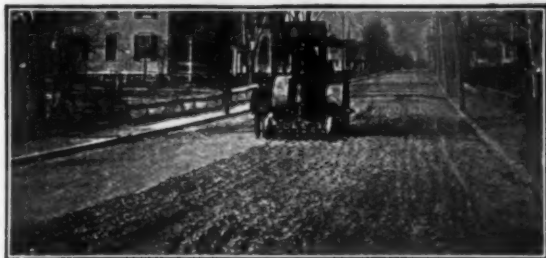
No matter what haulage you use or intend to use—if you want efficiency with economy—

*Get the facts from Brookville*

**Brookville Locomotive Co.**

Brookville — U. S. A. — Penna.

# BUFFALO-SPRINGFIELD ROLLERS



**All Types and Sizes**  
With or without Scarifier attachment.

Helps you finish the job on time.



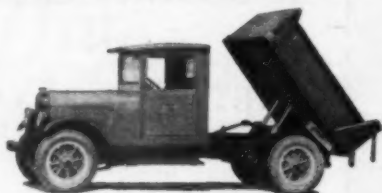
Send for catalog A for complete information.



**The Buffalo Springfield Roller Co.**  
Springfield, Ohio.



When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.



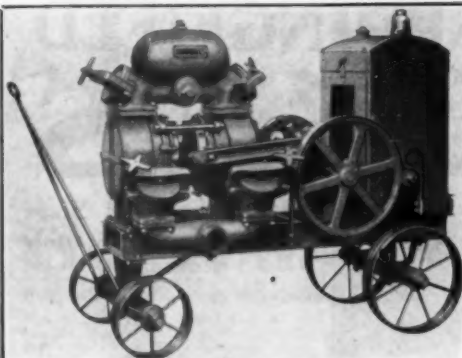
## HEIL SERVES SPEED

The Heil Hydro Hoist, when mounted on the Reo "Speedwagon" shown above, will dump any load in less than 15 seconds. When speed is desired, get it in the dumping equipment as well as in the truck.

*Write for your copy of H. Q. N.  
It will interest you*

**THE HEIL CO.**

1242-60 26th Ave. Milwaukee, Wis.



## DRAINAGE

of sewer and foundation jobs is always a serious problem to the contractor, especially when the water must be carried away from the excavation or must be lifted more than 25 feet.

Contractors using Humphryes Double Four Lift and Force Trench Pump have found the best solution. Profit by their experiences!

Bulletin 290C describes the plunger construction

The **HUMPHRYES** Mfg. Co.

Mansfield, Ohio

DISTRIBUTORS IN PRINCIPAL CITIES

## Costs Less to Own and Operate

Porta-Hoist costs less to own and operate than stationary hoists of the same capacity—and handles all pulling and lifting operations within the power-range of a Fordson tractor engine just as efficiently.

—And—you can use the power from the tractor to move the hoist from job to job or for any of many belt and drawbar tasks.

*Write for bulletins.*

**PIONEER TRACTORS, Inc.**  
Winona, Minn.

*Carried in stock, sold and serviced by  
established distributors in principal cities*

**PORTA-HOIST**  
**CUTS YOUR COSTS**



## REINFORCED CONCRETE PIPE

Both the engineer who desires a sewer pipe having the least frictional resistance to flow and the contractor who desires the pipe that is easiest to lay properly endorse precast reinforced concrete sewer pipe made by the Newark Concrete Pipe Co.

*Write us for sketches showing  
type of joint furnished*

**NEWARK CONCRETE PIPE CO.**

462 BROAD ST.

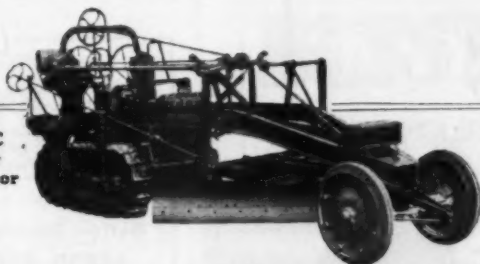
NEWARK, N. J.

NEWARK, N. J. BUFFALO, N. Y. DOVER, N. J.

ROCHESTER, N. Y.

CLEVELAND, O.

Model 28-C  
Caterpillar  
2-Ton Tractor



### SPEARWELL MOTOR GRADERS

A type for every choice or purpose—made for the following tractors—Caterpillar 2-Ton, International 10-20, John Deere, Cletrac and Fordson.

Caterpillar or crawl-tread for heavy-duty grading, land leveling or work in loose or wet ground. Rubber-tired road wheels for high-speed maintenance of streets and highways.

A complete standard 8-ft. grader unit with 8-ft. blade, front or rear scarifier and with all standard controls, including blade reverse, operated from driver's platform in the rear.

*Write for Illustrated Literature and Prices*

**SPEARS-WELLS MACHINERY CO., Inc.**  
Oakland, Calif.

## CONTRACTORS LABORERS X TIME = DOLLARS



Tying Concrete Reinforcing Bars  
with Wire Tie and Tying Tool

### BATES WIRE BAR TIES

Will save you time, labor and dollars.  
No skilled labor required to use this equipment.

Two or three turns with tying tool and bars are tied.

Ideal to use in cold weather—men do not have to take off their gloves.

*Manufactured by*

**BATES VALVE BAG CO.**  
8200 So. Chicago Ave.  
Chicago, Ill.

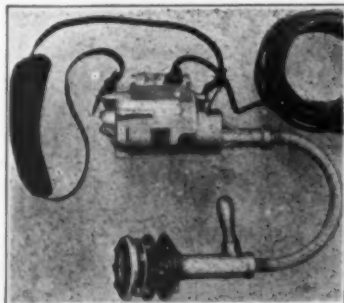
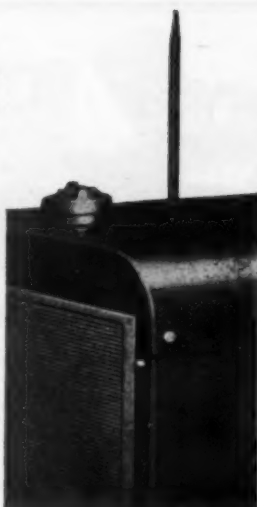
## Here's what we mean by vibra- tionless

This 2-cylinder Novo Roll Engine is running at 1800 r. p. m. The pencil standing on top remains motionless. That's what we mean by "Vibrationless." Send today for complete details.

NOVOENGINE CO.

216 Parker Street  
LANSING, MICHIGAN

**THE NEW NOVO**  
**ROLLER**  
Clarence E. Bement Vice-Pres. & Gen. Mgr.



BERG "Regular" Model. Machine supplied for operating on either 110 or 220 volts, direct and alternating current. Total weight, 23 pounds. Also supplied in Air Driven Model.

## BERG CONCRETE SURFACER AND FINISHER

In addition to surfacing and finishing concrete construction better, quicker and cheaper than any other method, the BERG is ideal for producing special finishes—for cutting brick walls preparatory to stucco application—for grinding paint from bricks—and many other uses.

It will be to your advantage to know more about this time-labor—money saving tool. Complete information mailed on application.

One man with a BERG can do the work of four rubbing by hand.

**The Concrete Surfacing Machinery Co.**

Pioneer Manufacturers of Machines for all kinds  
of Concrete Surfacing

4669-71 Spring Grove Ave., Dept. F, Cincinnati, O.

**Aercoil**  
BURNERS

## "Smokeless" — "Oil Burning"

Asphalt Melting Kettles  
Portable Water-heaters  
Thawing Torches  
Concrete Heaters

Lead Melting Furnaces  
Sand and Gravel Heaters  
Mortar Heating Pans  
Salamanders

No Smoke—No Sparks—No Ashes—Just Heat

Send for Illustrated Catalogs and Testimonials

**AEROIL BURNER COMPANY, Inc.**

Park Ave. at 13th St., West New York, N. J.

## WILLIAMS COLUMN CLAMP

### THE NEW

### WILLIAMS COLUMN CLAMP

ONE SIZE CLAMP FOR ALL SIZE COLUMNS

The WILLIAMS COLUMN CLAMP is made in ONE SIZE only, and this size can be made to fit ANY SIZE COLUMN. The clamp is made with teeth on the upper and lower surfaces, the one straight and the other diagonal. The diagonal teeth are meshed when the clamp is used singly on smaller columns; the straight teeth are meshed when using the clamps on the larger columns, using as many clamps as are necessary, placing them in series.

**HAWLEY MANUFACTURING CO.**

26 W. Kinzie St., Chicago, Ill.

Distributors in all principal cities

Wm. J. Burke & Co., Sole Western Agents

200 Davis St., San Francisco, Calif



The heart of your mixer is the power unit. Shut-downs are expensive. ALAMO ENGINES are serving others with dependable and efficient power. They can help you. Write us about your power problems.

## ALAMO ENGINE CO.

Hillsdale,

Michigan

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



## WILL SAVE MONEY FOR YOU

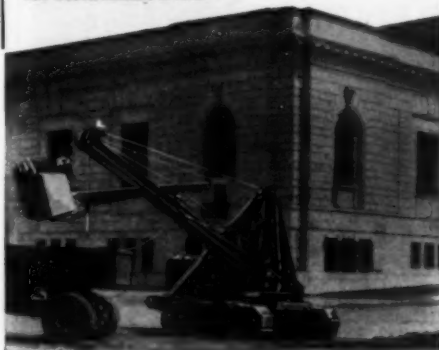
Wilford units are saving money for their owners—Wilford shovels, clamshells, cranes, trench hoes, draglines and backfillers. All are quickly interchangeable. The Wilford is built for hard work, year in and year out. Hundreds of these units, in actual operation, have proved their superiority in dollars and cents. Really one-man operation from one seat—dependable Fordson power—universal Fordson service and the backing of a strong and capable organization.

*Write for Bulletin No. 6,  
which gives information  
covering the full line*

### UNIVERSAL POWER SHOVEL CO.

WILLIAM FORD, President  
Detroit, Michigan

One of the Wilford Power Shovels owned by the City of Detroit, Department of Parks and Boulevards, at work at the new Detroit Institute of Arts.



## BLYSTONE MIXERS

Have you a minute to spare?

—Write for the BLYSTONE circular. — It will save you *many minutes.*

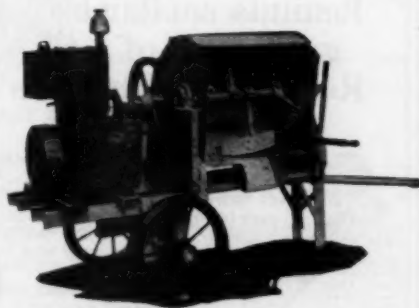
Save your man-hours and your dollars by using the BLYSTONE MIXER for all kinds of mixing work, especially for mixing concrete, mortar or plaster.

With one BLYSTONE you can mix enough plaster to keep twenty-five plasterers busy.

You can use 30-40 per cent more sand with a BLYSTONE than when you have the plaster mixed by hand.

And you get *speed, thoroughness and thorough satisfaction.*

Invest a minute now, in sending for that BLYSTONE circular, with our assurance to you that the returns on your "investment" will be enormous!

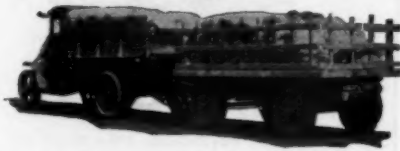


**BLYSTONE MFG. COMPANY**  
1127 C Street      Cambridge Springs, Pa.

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



## A Trailer for Every Hauling Need



### HIGHWAY TRAILERS

For Machines: Shovel, Crane, Roller, Trencher, Paver, Mixer and Compressor.

For Materials: Cement, Sand, Gravel, Stone, Lumber, Steel, Pipe, etc.

Two, four, six and eight-wheel types — one-half to fifty ton capacities. Write for Bulletin.

HIGHWAY TRAILER CO.

301 Fulton Street  
EDGEMONT, WIS.



**BUILT IN THE WORLD'S LARGEST TRAILER PLANT !**

# Mack

## Reminiscent Rambles and Reams of Rollicking Rhymes



C.E.M.

Please send me a copy of your free book entitled:

"Reminiscent Rambles and Reams of Rollicking Rhymes."

Name

Address

HEINRICH,  
VER IT IS OOT  
CHUCKLES BOOK  
VOT FROM DER  
MACK COMPANY  
COMES ?

OCH, HANS,  
FIRST DER WIFE  
CHUCKLES MIT IT,  
DEN DER KIDS  
TO BED TAKES  
IT, UND VEN  
DER PLUMBER,  
GETS IT, HE LAUGHS  
VILE MINE CELLAR  
ALL VETS GETS VERE  
DER WATER COMES  
IN MIT QUICKNESS!



THERE are a few happy individuals in the business world who occasionally find a laugh lurking amid the detail of the daily grind. Blessed are they, for a chuckle now and then helps to take the squeaks out of a swivel chair.

This 40-page pocket edition of humor is based upon actual happening. Its purpose is simply to pass along the laughs in accordance with Heinrich's idea that:

"Business is better business ven der chuckles vave rolls in once in so often." Those qualified to criticize have pronounced this the most interesting book of spontaneous humor ever developed by a business institution.

The booklet is complimentary; drop a postcard to,

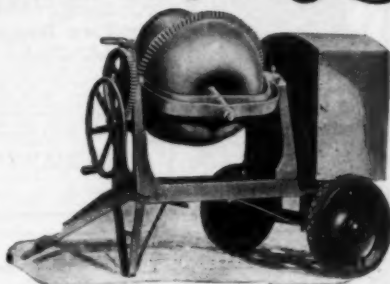
MACK TRUCKS, INC.  
252 W. 64th St., (Adv. Dept.)  
New York City

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## The Original **LAUSON** Timken Equipped

### 3 1/2-foot Mixers

Every feature sensibly engineered and built to last. The simplicity, ruggedness and durability of these mixers account for their popularity with contractors everywhere.



**Highest  
Quality  
Reasonably  
Priced**

### Dust-Proof Timkens Prolong Life

The counter-shaft that carries gear and drive pinion runs in oil on Timkens, eliminating friction and also assuring perfect alignment. The absence of these features is the weak spot in other mixers.

All gears enclosed in steel engine housing. The disc wheels are Timken-equipped—easy to push around.

**Furnished in any desired type mounting—**

skids, disc wheels with solid rubber tires, all steel wheels.

*We also build Plaster and Mortar Mixers, Contractors' Saw Rigs, Gas Engines for all uses, 2-35 H.P., and 35-45 H.P. heavy-duty Power Units*



**THE JOHN LAUSON MFG. CO., 11 Jackson St., New Holstein, Wis.**

## *If* you have a dumping problem!

For 16 years Wood Hoists and Steel Dump Bodies have solved the dumping problems of truck manufacturers, truck dealers and uses.

Wood Dumping Equipment is economical because of its satisfactory performance and service—"Until the Last Load is Dumped."

**A Hoist and Steel Dump Body for every  
make, model and capacity of motor truck**

Meet us at the Good Roads Show, Cleveland, January 9-13, 1928

**Catalog and all the  
facts upon request**

**WOOD HYDRAULIC HOIST & BODY COMPANY**

**World's Largest Builder of Truck Dumping Equipment  
DETROIT, U. S. A.**



When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

## For City Streets—For Country Roads the MANY-PURPOSE ORD Concrete Road Finisher



For roads from 9 feet to 30 feet wide. Level, curved or on a grade.

The ORD is always ready to surmount road-finisher obstacles. Brings cheer to the heart of the contractor and a ready O. K. from the road inspector.

The ORD will finish a road the full width with one operation; or half at a time; or add a strip to an already existing road.

Where can you find a more useful machine?

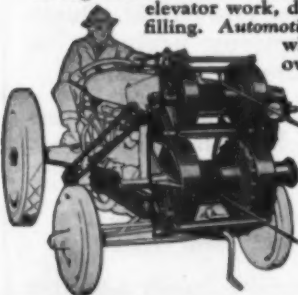
**A. W. French & Co.**

Manufacturers of the ORD Concrete Road Finisher  
8440 Lowe Ave. Chicago, Ill.

## big returns for Contractors •• on a small investment

Attach an Allison-Willamette to a standard Fordson and you have a time and money saving outfit for concrete construction jobs, elevator work, ditching, back-filling. Automotive—goes anywhere under its own power. . .

Write for literature.



Wherever a heavy lift or pull is required, there's a job for the—

**Allison HOIST**

WILLAMETTE IRON & STEEL WORKS, PORTLAND, OREGON, U. S. A.

**Willamette  
automotive hoists**  
ALLISON FOR THE FORDSON WILLAMETTE FOR THE CATERPILLAR

**BOSS MIXERS LEAD THE WORLD**

**Free Catalog**  
Showing latest improvements, labor-saving attachments, new models, a complete line of BOSS Mixers, Drum Mixers, Heavy Duty Tilters, Pavers, etc. for every job 6 ft. to 12 ft. wide.

**One-Two Bagger**  
The Famous One-Two Bagger is a Specialty Stand Mixer for Any Job. Mixes one bag and proportion or Two bags 1 1/2 ft. — Extremely compact. Weighs No More—Costs No More than some one baggers. 100% Patented Rapid Discharging and Reversing Action gives 25 to 50 more batches per day. Steel or rubber tired wheels. With Concrete Trucks converts into silo mixer. Write for catalog.

**THE AMERICAN CEMENT MACHINE CO., Inc.**  
Dept. 237 Kansas, Mo.  
Branch Office and Warehouse in All Principal Cities.

## Russell Motor Patrols Made in 4 sizes

- No. 2 for Fordson tractor for power
- No. 3 for 10-20 McCormick-Deering tractor for power
- No. 4 for "Caterpillar" 2-ton tractor for power
- No. 5 for "Gletrac" 20-K tractor for power

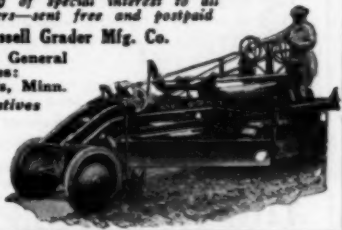
Our catalog of special interest to all road builders—sent free and postpaid

**Russell Grader Mfg. Co.**

Factory & General

Offices: Minneapolis, Minn.

Representatives in all principal cities



Statement of the Ownership, Management, Circulation, etc., Required by the Act of Congress of August 24, 1912, of Contractors and Engineers Monthly, Published Monthly at New York, N. Y., October 1, 1927.

State of New York, County of New York, ss.:

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared EDGAR J. BUTTENHEIM, who, having been duly sworn according to law, deposes and says that he is the President of the Buttenheim-Dix Pub. Corp., Publishers of CONTRACTORS AND ENGINEERS MONTHLY and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:  
Publisher, BUTTENHEIM-DIX PUB. CORP., 443 4th Ave., N. Y. C.  
Editor, THEO. R. KENDALL,  
Managing Editor, None.  
Business Manager, THEO. R. KENDALL.
2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)  
BUTTENHEIM-DIX PUB. CORP. 443 4th Ave., N. Y. C.  
Stockholders: EDGAR J. BUTTENHEIM J. T. DIX, Chicago, Ill.  
443-4th Ave., N. Y. C.  
HAROLD S. BUTTENHEIM } 443 4th Ave., N. Y. C.  
THEO. R. KENDALL  
HERBERT K. Saxe

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for statements embracing affiant's full knowledge and beliefs as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

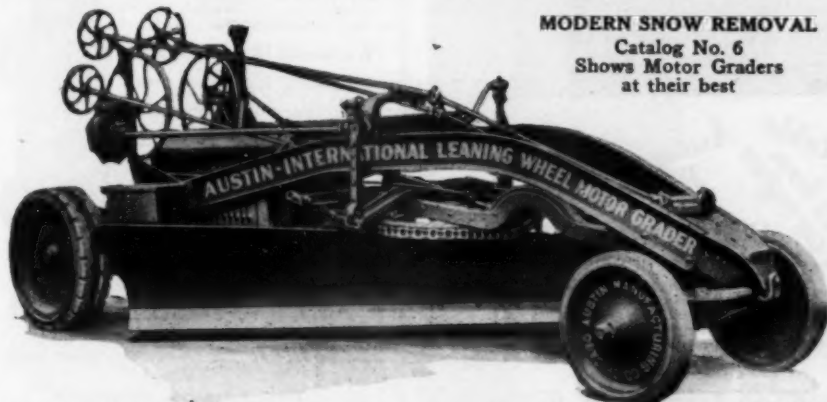
EDGAR BUTTENHEIM, President  
Sworn to and subscribed before me this 30th day of September, 1927.  
New York County Clerk's No. 385.  
My commission expires May 30, 1929.

H. RADNITZ  
Notary Public.  
Kings County, N. Y.

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

## IT WON'T BE LONG NOW!

That splendid machine that throughout the year maintains your roads can be kept on the job clearing the highways when snow flies. Write for prices on the special snow blade. The leaning wheels won't slip.



### MODERN SNOW REMOVAL

Catalog No. 6  
Shows Motor Graders  
at their best

**THE AUSTIN-WESTERN ROAD MACHINERY CO.**  
400 North Michigan Avenue Chicago, Illinois

## Hoist and Body Units That Pay Real Profits

**V**AN DORN hoist and body units are profit producers because their action is positive and trouble-free because they are built to stand the gaff of hard, continuous service.

Constantly bathed in oil and operating on the worm gear principal the hoist mechanism cannot be surpassed for service. The body itself, while lighter than ordinary truck bodies, has a strength far out of proportion to its weight.

A Van Dorn mechanical hoist plus a Van Dorn body is a combination that means real profits for the operator.

THE VAN DORN IRON WORKS COMPANY  
2685 E. 79th Street • Truck Division • Cleveland, Ohio  
"More Pay Loads—More Profits"

**Van Dorn**  
MASTERCRAFTSMANSHIP  
IN STEEL



Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



**Portable**  
*Drives from your car engine*  
**Great success**

**Automatically primed**

**Sturdy**  
*Large capacity*  
**Low cost**  
**Fool-proof**

HERE is a ditch pump at surprisingly low cost, yet it does a real job. The Barton attaches to the front of your car (any make), as shown, and your engine drives it. It primes itself automatically—and stays primed. Handles water, carrying mud, sand, etc. Write today for Bulletin 56 giving all the facts.

AMERICAN STEAM PUMP COMPANY  
BATTLE CREEK, MICHIGAN

**BARTON**  
PORTABLE PUMP

## CONNERY'S

### Tar and Asphalt Heaters

We manufacture a full line of Tar and Asphalt Heaters, Sand and Gravel Dryers, Oil Burning Heaters, Pouring Pots, etc.



Send for our little "Blue Book" illustrating our many specials in Tar and Asphalt Heaters—we build just what you want, for road work or general construction.

**Connery & Company, Inc.**  
4000 N. Second Street, Philadelphia, Pa.

## HAND BUSH HAMMERS

*A size for every bushing and dressing job on concrete*

We would like to acquaint you with the most complete line of Pneumatic tools and chisel equipment for bushing concrete and finishing cast stone.

Hand Points and Chisels  
Hand and Striking Hammers  
Drill Bits and Hollow Steels



*Descriptive matter awaits your call*

**THE DALLETT CO.**  
PHILADELPHIA  
NEW YORK CHICAGO

## BLAW-KNOX ROAD BUILDING EQUIPMENT

—Preferred by Contractors: Road Forms, Street and Sidewalk Forms, Measuring and Weighing Batches, Launderers, Self-cleaning Portable Batchers, Steel Bins, Turntables, Clamshell Buckets, Standard Steel Buildings and Calcium Chloride Machines.

*Write for Catalog*

**BLAW-KNOX**  
COMPANY  
PITTSBURGH, PA. 087 Farmers Bank Bldg.  
New York Chicago Cincinnati Baltimore  
San Francisco London, Eng.



WE HAVE A COMPLETE LINE  
OF DERRICKS AND WINCHES

**SASGEN DERRICK CO.**

3103 W. Grand Ave.

Chicago, Illinois



## LIKE THE STRONG MAN

The strong man handles enormous weights. Endowed with great strength he must ever be ready to resist unusual strains. Like a strong man, Rogers Heavy Duty Gooseneck Trailers handle enormous weights. Reinforced at every point to insure maximum strength, they too, resist unusual

strains. In addition to transporting heavy loads safely and speedily, Rogers Trailers save loads, roads, time and money.

Rogers Heavy Duty Gooseneck Trailers are built to meet any requirement.

**WRITE TODAY! AND TELL US YOUR NEEDS**



*40-Ton Buckeye Trench Excavator. Moved by Brown Cartage Company, Cleveland, Ohio, for the Kassouf Company, Cleveland, Ohio.*

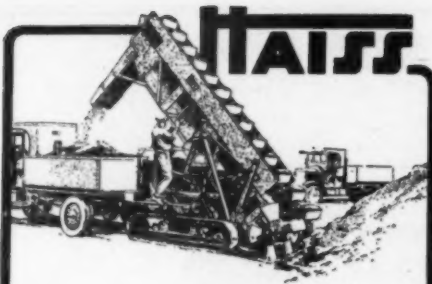
**ROGERS BROTHERS CORPORATION, Albion, Pa**

## THE HARDSOCC WONDER DRILL



Will save you time on any rock-drilling job—no matter how difficult. You will find it a small air-consumer, easy to handle, smooth-running and trouble-free. It has seven less parts than other drills have, therefore the wear and upkeep expense is much less. It's a "Wonder." Let us tell you more about it.

**HARDSOCC WONDER DRILL CO.**  
OTTUMWA, IOWA  
*Agents in All Principal Cities*



**If** you own a sand pit or a material yard or are carting ashes or hiring a gang of shovelers—look into the possibilities of a Haiss Loader.

Catalog 527

**The George Haiss Mfg. Co., Inc.**  
142nd Street and Park Avenue, New York

## HONHORST TAR HEATERS

*"Built for service"*

ALL STYLES

Portable and Stationary  
25 to 200 gallons

See our page in Street Construction Section  
Municipal Index for the Kettle you need

or

Write for Catalog

**THE JOS. HONHORST CO.**  
1016 W. 6th St. Cincinnati, O.

## UNIVERSAL HOISTING MACHINERY CORP.

420 Sycamore St., BUFFALO, N. Y.

**DERRICKS, STEEL OR WOOD; WIRE ROPE SHEAVES AND BLOCKS; WINCHES, HAND AND ELECTRIC**

*Let us show you our real design of Derrick Fittings Backed by an Unusual Guarantee*



You Buy  
**STRENGTH - SERVICE - SAFETY**  
when you purchase

**ANVIL BRAND BLOCKS**

For  
**MANILA OR WIRE ROPE**

We make all standard styles and sizes and can also supply any special blocks, if you will furnish specifications.

Send for Catalog C.E.

**WESTERN BLOCK CO.**

Lockport, N. Y.  
New York City Chicago

## EAGLE DUMP WAGONS for Excavation and Grading



made in 1½- to 5-cu.yd. size, 3- or 4-inch tires - - immediate shipment

**THE EAGLE WAGON WORKS**  
AUBURN - NEW YORK

In the year 1748

Benjamin Franklin said:



*"Good sense is a thing all need, few have, and none think they want."*

Add to the enjoyment of your visit; choose your hotel wisely and apply Franklin's doctrine of good sense.

The Benjamin Franklin is the newest and most beautifully furnished hotel in the midtown section of Philadelphia.

1200 Rooms, each with bath  
Rates 1/4 upward

THE  
**BENJAMIN FRANKLIN**  
CHESTNUT & NINTH ST.

PHILADELPHIA

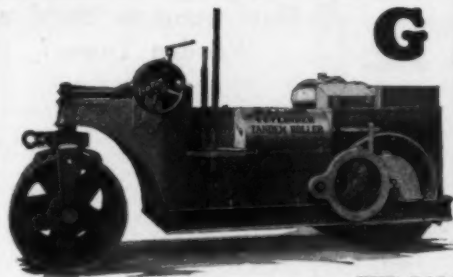
MORACE LELAND WIGGINS  
Managing Director

UNDER DIRECTION



OF AMERICA

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.



## **GALION**

### **MOTOR TANDEM ROLLERS**

**5-6-7-8-9-10 Ton Sizes**

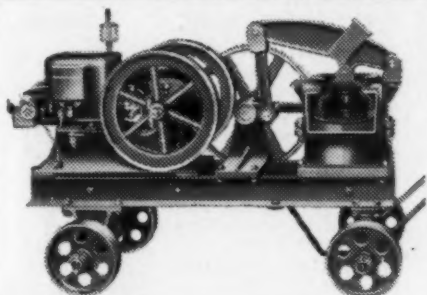
Smooth and easy in operation—start at a moment's notice—no smoke or ashes—perfect work on asphalt.

Galion 4-cylinder motor tandem rollers meet every tandem roller need.

The Galion line also includes steam tandems in the same weights if you prefer them.

*Write for Catalog and Prices*

**THE GALION IRON WORKS & MFG. CO., Galion, O.**  
*The World's Largest Road Machinery Plant*



## **WITTE PUMPERS**

**AND ALL-FUEL ENGINES**

**1½- to 30-Horsepower**

**ESTABLISHED 1870**

**57 Years' Progressive Engine Building**

**ENGINES—LOG SAWS—PUMPERS**

*Dealers: Write for our complete catalog.*

## **WITTE ENGINE WORKS**

3018 Witte Building, Kansas City, Mo.  
 3018 Empire Building, Pittsburgh, Pa.

## **JT TRACTORS**

**For**

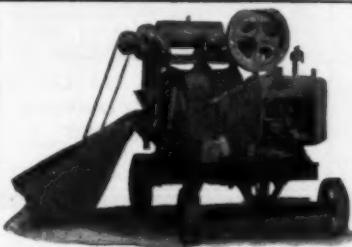
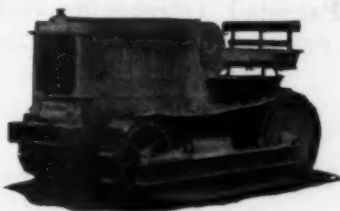
## **SATISFACTION**

*Ask any JT Operator*

**The JT Tractor Company**

**Cleveland, Ohio**

**45 H. P. Five Ton**



## **Atlas YARDAGE**

120 to 150 cubic yards in 10 hours with an Atlas one-bag Mixer.

Atlas Mixers are of sturdy dependable construction and the 7-S is regularly equipped with multiple-cylinder LeRoi Engine, giving excess power.

We build 3½-foot, ¼-bag, 1-bag and 2-bag Mixers.

*Dealers write for agency proposition*

**ATLAS ENGINEERING COMPANY**

**3036 GALENA STREET**

**MILWAUKEE, WIS.**

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

**W.A. RIDDELL COMPANY**

**NOW!**

—When roads must be kept open—  
—When clogged highways mean stopped business—  
—When closed schools—lost students—meanings—  
—When more than ever now is the time when an H-P GRADER MEANS OPEN ROADS! Don't risk inferiority! Get H-P's Snow Removal Outfits and be safe!

Think... then write!



**W. A. RIDDELL COMPANY**  
Successors to THE HADFIELD-PENFIELD STEEL COMPANY  
BUCYRUS, OHIO

## STAR POWER SHOVEL

with

### Patented Telescoping Handle


Full Revolving—Full Length Crawler  
Grader—Shovel—Ditcher  
Backfiller—Crane

• • • • •

Well Drilling Machinery

**The Star Drilling Machine Co.**

Akron, Ohio



**KIESLER**

**Clam Shell Buckets**

Guaranteed to give satisfaction  
Catalog on request

**Jos. F. Kiesler Company**  
936 W. Huron Street,  
Chicago, Ill.

**O. K.  
Portable  
Elevator**



## How Long to Build a Wooden Tower?

Two men can erect this steel O. K. Elevator, ready for hoisting, to 20-foot height in two hours. Additional 10-foot sections quickly added. Hoists 1500 pounds at 150 F.P.M. Platform for one or two wheelbarrows. The handiest hoisting outfit for builders, bricklayers, plasterers. Many in service have proved the O. K. Elevator a time- and labor-saver.

Write for catalog on our full line of O. K. Hoists and Air Compressors

**O. K. Clutch & Machy. Co.**  
COLUMBIA, PA.

## "TEN TIMES MORE LIGHT"—

"Ten times more light than an oil lantern, and at less cost!"

This remark by a railroad man explains why thousands of National Carbide Lanterns are being used today by contractors, miners, tunnel workmen, street repair crews, and others who want a dependable, strong, clear and penetrating light.

**NATIONAL CARBIDE SALES CORP.**  
342 MADISON AVE., N. Y.



## A MAGNIFICENT NEW HOTEL

400 Rooms with Baths  
\$3.00 and up for One Person  
\$4.50 and up for Two Persons

**HOTEL  
KNICKERBOCKER  
NEW YORK**

**WEST 45<sup>TH</sup> STREET**  
Just East of Broadway  
Times Square  
Heart of  
Theatrical and Shopping District



A BATTERY OF  
W & T VACUUM CHLORINATORS  
AT THE  
CANAL ST. SEWAGE SCREEN CHAMBER  
NEW YORK CITY

## The W & T Vacuum Chlorinator

### LONG LIFE

The first vacuum chlorinator is still in operation.

### ACCURATE

Indicates the true chlorine flow—average error negligible.

### SIMPLE

No diaphragm valves on the chlorine supply.

### LEAK PROOF

Any leak would be into the apparatus—because of the vacuum.

### NON-CORRODIBLE

Silver—platinum—glass—hard rubber—nothing else comes in contact with wet chlorine.

### VISIBLE CONTROL

The glass bell jar lets you see what is going on.

### LOW UP-KEEP

Averages less than 1% per year.

### EFFICIENT

The vacuum completely empties the chlorine cylinders.

Write for Technical Publication No. 38N

*"The only safe water is a sterilized water"*

## WALLACE & TIERNAN

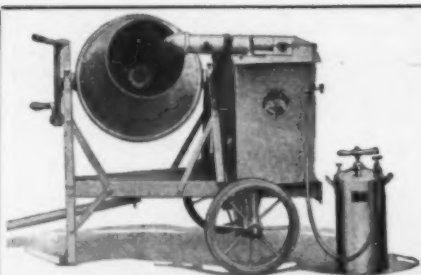
COMPANY, INCORPORATED

NEWARK / NEW JERSEY

NEW YORK CHICAGO KNOXVILLE SAN FRANCISCO MINNEAPOLIS PITTSBURGH DALLAS KANSAS CITY  
SEATTLE ST. LOUIS BUFFALO HARRISBURG BOSTON INDIANAPOLIS CLEVELAND, N. Y.  
WALLACE & TIERNAN, LTD., TORONTO, CANADA

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.





## LITTLEFORD CONCRETE HEATERS

for tilting and non-tilting mixers make concrete mixing easy and convenient in freezing-weather. Mix can be discharged at 75 degrees temperature in zero weather. No additional labor required as same man operates mixer and heater. All ready to attach. Burns kerosene. Simple valve adjustment controls heat under all conditions.

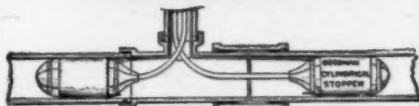
*Just tell us the kind of mixer you are using and capacity, and we will be glad to quote and send our descriptive Bulletin C-13*

**LITTLEFORD BROS.**

485 East Pearl Street

Cincinnati, Ohio

## FOR USE IN— GAS, OIL, WATER AND DRAIN PIPES



**SAFETY GAS MAIN STOPPER CO.**

523 Atlantic Avenue

Brooklyn

New York



1 1/4-Yard  
3/4-Yard  
Tractor  
Models

## BAKER MANEY Self Loading Scrapers

The Baker Manufacturing Co.

585 Stanford Ave.,

Springfield, Ill.

## HOISTING BLOCKS

STAR BRAND

*Are Always Reliable*

Made for  
Every Condition of Service

Sold by  
Leading Supply Houses

or

**BOSTON & LOCKPORT BLOCK CO.**

NEW YORK EAST BOSTON CHICAGO

## UNION WATER METER CO.

Worcester, Mass.

Union Water Meter Company is one of the few American manufacturing concerns that has progressed sixty years under the same ownership. This pioneer company began in the early sixties and incorporated in 1868 the organization which has won a place of leadership in the manufacture of water meters, valves, stops, pipe lining equipment and fire whistles. Catalog G-57 sent on request.

New York Office: 80 Church St.

Philadelphia Office: 411 Bulletin Bldg.

# Buhl

A variety of types and sizes to meet every portable compressor demand—Sold through reliable dealers and distributors.



Send for bulletins today

**The Buhl Company  
MANUFACTURERS**

General Office:  
405 E. DEARBORN ST.  
CHICAGO

BUHL type "Y" furnished in 115 and 180 ft. displacement

# ALDRICH

THE ALDRICH PUMP COMPANY

Foot of Pine St.  
Allentown, Pa.

HYDRAULIC TABLES—DATA 50

SEND FOR IT.

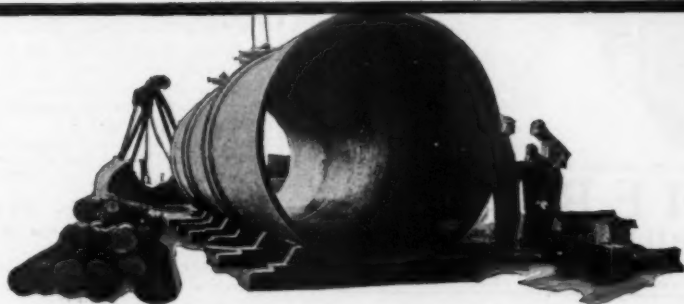
VERTICAL POWER TRIPLEX  
HORIZONTAL QUINTUPLEX

# PUMPS

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.



## Boston Selected 84" cast iron pipe



*Where permanence and low maintenance cost are essential*



**Cast Iron Pipe is chosen!**

*Municipal, industrial or construction engineers are invited to write for literature covering cast iron pipe and fittings for all purposes.*

# United States Cast Iron Pipe and Foundry Company

### SALES OFFICES

Philadelphia: 1421 Chestnut St.  
Chicago: 122 So. Michigan Blvd.  
Birmingham: 1st Ave. & 20th St.  
Buffalo: 957 East Ferry Street  
Cleveland: 1150 E. 26th Street  
Minneapolis: 8th St. & Hennepin Ave.  
New York: 71 Broadway  
San Francisco: 3rd & Market Sts.  
Pittsburgh: 6th & Smithfield Sts.  
Dallas: Akard & Commerce Sts.  
Kansas City: 13th & Leavitt Sts.

### General Offices

**Burlington, New Jersey**

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

**TRAIL-IT COMPANY**  
St. Paul, Minn.



**Speed up work this WAY**

Save time by taking your shop to your job. The American woodworker performs 14 woodworking operations. Four men can work at it at once. Write for details of this and other cost-cutting machinery.

Agents wanted for open territory

**AMERICAN SAW MILL MACHINERY CO.**  
MAKERS OF WOODWORKING AND SAW MILL MACHINERY  
171 Main Street Hackensack, N. J.

**This New Booklet Can Help You On Excavating Jobs**

It shows in detailed pictures and diagrams how Sauerman Shackle Cableways dig, convey and elevate, and are operated by one man. It tells how many users are cutting the cost of excavating and gravel producing. If you are interested in lower costs, this booklet can help you. Send for your copy today.

**SAUERMAN BROS., INC.**  
404 So. Clinton St., Chicago



**STANDARD Asphalt Products**

Standard Asphalt Binder A for surface treatment  
Standard Asphalt Binder B for penetration work  
Standard Asphalt Binder C for the mixing method  
Standard Cold Patch Asphalt for repairing all types of bituminous road surfaces  
Standard Refined Mexican Asphalt for sheet asphalt paving  
Standard Asphalt Joint Fillers for brick or block pavements  
Standard Paving Flux, Standard Bridge Asphalt and Preserving Oils

**STANDARD OIL CO. OF NEW YORK, 26 Broadway**

**THE FULLER**  
AUXILIARY TRANSMISSION FOR FORD TRUCKS



Give the Ford Truck four speeds forward and two reverse, together with 80% more pulling ability. Its rear end location actually prolongs the truck's life.

**PRICE \$60.00**

**FULLER & SONS MFG. CO.,** Kalamazoo, Mich.  
Transmission Builders for 25 Years

**PILE HAMMERS CONCRETE BUCKETS**

It will pay you to look up the UNION line. Write for Bulletin 63, then keep the pages handy for reference by binding them in with the *Associated Equipment Distributors Catalog*. UNION equipment for construction work also includes Grout Mixers and Ejectors, Caissonway Ships, Tunnel Shields, Air Locks, etc. (All described in Bulletin 63.)

**UNION IRON WORKS**  
Builders of Double Acting Pile Hammers since 1906  
West Shore Siding Hoboken, N. J.

**"NATIONAL"**  
Automatic Power Tampers and Concrete Block Machines for Rapid and Perfect Block Production

Send for Catalog.

**CEMENT BLOCK MACHINERY CO.**  
17 Durand Street Newark New Jersey



**STEEL SHEET PILING**

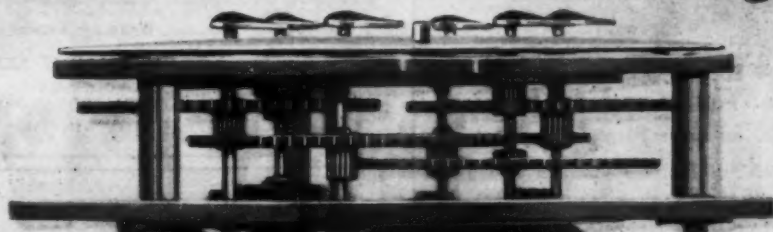
RENTED - SOLD - BOUGHT  
PILE HAMMERS RENTED

**WEMLINGER, Inc.**  
149 Broadway New York



Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

# The Acme of Simplicity



## THE SENSITIVE, ACCURATE REGISTER OF THE TRIDENT METER

Corrosion-proof. Hard-rubber bushings on all spindles minimize friction as well. Binding-proof. Accurate machining insures proper assembly, permanent alignment. Wear-proof. Liberal gear faces and spindles; slight stresses. All parts interchangeable. No bolts. No screws. Gauged, checked and rechecked for accuracy at every step of manufacture and assembly.

Over 4,500,000 Trident and Lambert Meters made and sold the world over.

The eight outstanding pioneering developments in water meter design were all TRIDENT. Write for catalog giving full particulars.

"Lambert  
Meter"

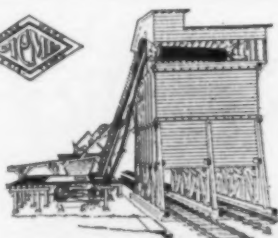
*"The Cash Registers of the Water Works Field"*



**NEPTUNE METER COMPANY**  
THOMSON METER CORPORATION  
30 EAST 42<sup>ND</sup> STREET  
NEW YORK CITY  
FACTORY  
LONG ISLAND CITY, N.Y.  
PIONEERS IN METER PROGRESS



Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



### Solve Your Crushing Problem with an Acme Plant,—Complete!

**W**HATEVER your problem in preparing stone or gravel for road or concrete work, there is an Acme combination of crushers, elevators, screens, bins, and accessories that will successfully overcome it.

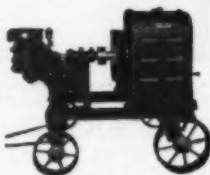
The wisest course is to install a crushing plant complete, a plant that is Acme-designed to meet every existing problem and Acme-equipped to give you service for years to come. Write for full particulars.

**Acme Road Machinery Co., Inc.**  
Frankfort, N. Y.

### Where Water has to be Moved Fast

— when getting water out means getting dollars in—the Powermaker Centrifugal Pumping Unit is a money maker.

Write for bulletin P.C.P. 1



**THE COOK MOTOR CO., Delaware, Ohio**

**Powermaker**  
EQUIPMENT

### Jaeger TILTERS

**AUTOMATIC POWER  
LOADERS**

All sizes—3½, 5, 7, 10, 14  
foot Capacity. 36 Labor-  
Saving Models and At-  
tachments.

Get our popular prices on  
heavy duty Trailer Mixer  
with springs and cushion tires.  
Jaeger now furnishes NON-TILT MIXERS  
in all sizes up to 1 yd. capacity—also FLAS-  
TER MIXERS.



A faster, light, one-  
ton Mixer with  
TIMKEN Roller  
Bearings

**THE JAEGER MACHINE COMPANY**  
701 Dublin Avenue Columbus, Ohio

### SPARTA DRILLS SAVE MONEY

The "Sparta" is designed to make fast work with least possible fuss. When considering drilling operations investigate "Sparta" thoroughly.

Write for Catalog

**BURKHARDT CO.**  
Successors to  
**SPARTA IRON WORKS**  
Kiel, Wisconsin



### MIAMI 2½-Ton . Bottom Dump Trailer

All-steel construction; capacity 1½ yards water level, 2 yards with extra top box. Timken bearings in wheels provide against end thrust inward and outward. Dust-proof hubs. Full cut-under fifth wheel. Will turn in its own length. Low loading height of 56 inches. Dumping device allows doors to open at any width for spreading load, or load can be dumped instantly. This trailer is also furnished in 3-ton size. Platform body and rubber tires optional.

Complete information for the asking. Its low price will interest you.

**THE MIAMI TRAILER-SCRAPER CO.**  
610 S. Clay Street Troy, Ohio



### WANTED

something to manufacture in light metal or combination of wood and metal. Suggestions wanted. Will pay agreed price for any suggestions or ideas adopted. If patented send copy of patent.

**G. ELIAS & BROTHER, Inc.**  
BUFFALO, NEW YORK

### KINNEY ROLLERS



2-, 3-, 4-, 5-, 6-ton Fordson  
Power ROADROLLERS

Standardization adds to Quality and affords many advantages. What, if any, variable capacity do you need? What weight Roller? Write:

### KINNEY STANDARDS, Inc.

Roadrollers - Lawnrollers - Superlawnmowers  
118 Quincy St. BROOKLYN, N. Y.



# **DIRECTORY of ENGINEERS, CONTRACTORS, ARCHITECTS, ETC.**

**INTELLIGENT  
PLANNING**

**PROPER  
CONSTRUCTION**

**ALBRIGHT & MEBUS***Civil Engineers*

Town planning and municipal improvements, parks, drainage, sewerage and sewage disposal.

1502 Locust Street  
PHILADELPHIA

**BARSTOW & McCURDY, Inc.***Civil and Sanitary Engineers*

E. D. Barstow G. E. McCurdy  
A. Le Feber W. S. Mathews

Sewerage and Sewage Disposal  
Water Supply

Municipal Engineers  
322 Ohio Bldg. Akron, Ohio

**BLACK & VEATCH***Consulting Engineers*

Water Supply, Water Purification, Sewerage, Sewage Disposal, Power Plants, Valuations, Special Investigations and Reports.

E. B. Black N. T. Veatch, Jr.  
Mutual Bldg., KANSAS CITY, MO.

**H. K. BARROWS**

Member Amer. Society C. E.

*Consulting Hydraulic Engineer*

Hydro-electric plants—plans, reports, supervision and advice  
Water supply and hydraulic problems

6 Beacon St. BOSTON

**Bennett, Howard D.***Consulting Engineer*

Dredges for every service.

Sand and Gravel Plants;

Floating Equipment;

Valuation; Supervision;

Reports; Plans; Specifications;

Etc.

Baltimore, Md., 3114 Allendale St.

**THOMAS F. BOWE***CONSULTING ENGINEER*

REPORTS WATER SEWERAGE,

VALUATION TREATMENT OF

DESIGN SEWAGE

OPERATION INDUSTRIAL PLANTS

110 William Street,  
New York City

**FREDERICK SNARE CORPORATION***Contracting Engineers*

114 Liberty Street, New York

Harbor Works, Railroads, Bridges, Industrial Plants, Sugar Plants, Steel and Masonry Construction, Pipe Lines, Water Works.

Cable Address, Santos, New York.

Cable Address, Pawns, Havana.

Western Union and Lieber Codes Used.  
Havana Office, Paseo de Marti 110-A

W. E. Conard

J. S. Buzby

**CONARD & BUZBY**

BURLINGTON, N. J.

Specialists on Water Works—

Materials  
Specifications

Reports  
Inspections

Designs  
Tests

**NICHOLAS S. HILL, Jr.***CONSULTING ENGINEER*

**WATER SUPPLY—SEWAGE DISPOSAL—HYDRAULIC DEVELOPMENTS**

Reports, Investigations, Valuations, Rates, Design, Construction, Operation,  
Management, Chemical and Biological Laboratories

112 East 19th Street

New York City

OVER HALF A CENTURY IN CHICAGO

**THE EDGAR A. ROSSITER CO.***CONSULTING ENGINEERS*

160 North LaSalle St., Chicago

Water supply, sewerage, and sewage disposal, drainage, farm and levee-pumping plants, electric light systems, pavements, track elevation, tunnels, mining.

**RUSSELL ENGINEERING COMPANY***CONSULTING AND DESIGNING ENGINEERS*

Highways—Land Reclamation—Flood Control—River and Harbor Development—Bridges—Piers—Bulk-heading—City Planning—Municipal Engineering—Water Supply—Sewerage—Investigation—Reporting—Valuation and Advisory Service.

Miami, Florida  
132 E. Flagler Street

Opalocka, Florida  
P. O. Box No. 1

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

**J. H. A. BRAHTZ**

*Consulting Engineer  
To Municipalities*

601-603 Builders Exchange  
St. Paul, Minn.

**A. H. GILLILAND**

*Civil Engineer*

Water Supply,  
Sewage Drainage,  
Roof Truss design,  
Surveys, Estimates,  
Reports, Foundations.

1007 N. Howard Street  
Indianola Iowa

**Morris Knowles, Inc.**

Specialising in Municipal Engi-  
neering and Public Utilities,  
Real Estate Developments and  
Town Planning.

Pittsburgh Cleveland

**L. G. CARPENTER**

*Consulting Engineer*

Investigations, Reports, Examina-  
tions, Water Supply, Irrigation

702 First National Bank Bldg.  
Denver, Colo.

New York City 116 West 89th St.

**A. E. HANSEN**

Hydraulic & Sanitary Engineer  
Design & Supervision of Construction  
Sewerage Water Works  
Sewage Disposal Water Purification  
Drainage Water Works  
Expert Services in Litigation

**Landreth, Olin H.,**

*Consulting Engineer.*

Hydraulic and Sanitary Engineer-  
ing, Consultation, Investigation  
Valuation.

New York, No. 166 Fifth Ave.

**CAVEN ENGINEERING COMPANY**

*Consulting Engineers*

Design and Supervision in Central  
and Southern States.  
Land Development—Sewerage—In-  
dustrial Planning—Reports and  
Surveys

209-210 Cerke Building  
Cincinnati, Ohio

**HAZEN & WHIPPLE**

CONSULTING HYDRAULIC  
and SANITARY ENGINEERS  
WATER SUPPLY and SEWERAGE

Allen Hansen L. M. Babbitt  
O. M. Everett Malcolm Pirnie  
23 W. 44th Street New York

**E. F. LAYMAN C. E.**

Sewers, Water Supply, Pav-  
ing, City Planning.

514 MAIN STREET  
CINCINNATI, OHIO

**Chester Engrs., The J. N.**

J. N. Chester D. E. Davis  
J. F. LaBoon J. T. Campbell  
E. E. Bankson

Consulting, Hydraulic, Sanitary  
and Valuation Engineers.

Union Bank Bldg., Pittsburgh, Pa.

**HENRICI - LOWRY  
ENGINEERING COMPANY**

*Power Plant Design*

Appraisal Consulting  
Industrial Engineers

401-5 Security Bldg.  
Kansas City, Mo.

**J. L. LUDLOW**

Member Am. Soc. Civil Engrs.  
Member Am. Inst. Cons. Engrs.  
Reports, Plans, Appraisals, Design  
and Supervise Construction—Water  
Works—Sewerage and Drainage  
Systems—Water Purification and  
Sewage Disposal—Hydro-Electric  
Plants—Street Paving  
WINSTON-SALEM, N. C.

**Davison, Ransom & Burton,  
Inc.**

*Civil & Consulting Engineers*  
Fort Myers, Fla.

Seventeen years' practice in South-  
west Florida. Dependable reports  
on prospective Land Purchases or  
developments.

**J. FREDERICK JACKSON**

*Consulting Engineer*

Water Works, Sewerage and  
Industrial Waste Treatment.  
Town Planning.

185 Church St., New Haven, Conn.

**METCALF & EDDY**

*Engineers*

Water, Sewage, Drainage,  
Refuse and Industrial  
Waste Problems  
Laboratory

Statler Bldg. Boston

**CHAS. K. DODD**

*Civil Engineer*

Preliminary Surveys, Design, and  
Supervision of Construction.

Highways Water  
Drainage Paving  
Sewerage Structures  
Estimates and Reports  
PUNTA GORDA, FLORIDA

**Clark E. Jacoby Engineering Co.**

*Consulting Engineers*

River and Flood Control, Water  
Power Development, Land Reclama-  
tion, Drainage, Topographic Sur-  
veys, Bridges, Reinforced Concrete.

Interstate Bldg.  
KANSAS CITY, MO.

**MORAN, MAURICE &  
PROCTOR**

*Consulting Engineers*

Foundations for Buildings, Bridges  
and Dams, and all Sub-structure  
Work. Investigations, Reports,  
Consultations, Designs and Super-  
vision.

New York City, 342 Madison Ave.

**FULLER & McCLINTOCK  
ENGINEERS**

New York 170 Broadway  
Philadelphia, Pa. Kansas City, Mo.  
Pennsylvania Bldg. Walnut Bldg.,  
15th and Chestnut Sts. 800 Walnut St.

**The  
JENNINGS-LAWRENCE CO.  
CIVIL AND  
MUNICIPAL ENGINEERS**

511-12 Hartman Bldg.  
COLUMBUS OHIO

**Mullergren, Arthur L.**

*Consulting Engineer*

Specialist in Electric Light,  
Power and Water Pumping.

Kansas City, Mo., 555 Gates  
Building

**GANNETT, SEELYE &  
FLEMING, ENGINEERS, Inc.**

*Engineering, Appraisals,  
Construction, Management.*

Harrisburg, Pa.  
New York, N. Y. Lafayette, Pa.

**H. P. JONES & COMPANY  
ENGINEERS**

Harvey P. Jones Ralph B. Stizer  
Kenneth M. Waddell  
Sewerage, Sewage Disposal, Indus-  
trial, Public Utility, Water Supply  
and Industrial Waste Problems  
Investigations, Reports, Design,  
Supervision and Operation  
2nd Nat'l Bank Bldg. Toledo, O.

**New York Testing Laboratories**

*Chemical & Physical Tests, Mi-  
croscopical Examinations.*

Electrical Tests, Power Plant  
Tests, Expert Inspections, Cities  
and Industries.

80 Washington St., New York City

**PATZIG TESTING  
LABORATORIES****INSPECTION SERVICE**

*Chemical and Physical Testing of  
Paving and Building Materials  
Metals, Fuels, Oils, Water, Etc.*  
210 Eleventh St., Des Moines, Iowa

**SHENEHON, FRANCIS C.**

Member Am. Inst. Cons. Engrs.  
Member Am. Soc. C. E.

**Hydraulic Engineer**

839 Metropolitan Bank Bldg.  
Minneapolis, Minn.

**CORNELIUS C. VERMEULE**

Consulting & Designing Engineer  
Water Supply, Sewerage, Power  
Plants.

Valuations and Reports on Industries  
and Public Utilities.

38 Park Row, New York

**PEASE LABORATORIES, Inc.**

Formerly

**LEDERLE LABORATORIES**

Sanitary, Bacteriological and Chem-  
ical investigations for the Com-  
munity or Individual

39 W. 38th St., N. Y. City

**S. A. SIVERTS, JR.****MUNICIPAL ENGINEER**

200 Builders' Exchange  
Minneapolis, Minn.

**GERALD J. WAGNER**

Consulting Electrical Engineer

GRAND RAPIDS, MICH.

Consultant for Municipalities on  
Gas, Street Railway, Electric and  
Telephone Problems.

**THE PICARD LABORATORIES**

*Chemists and Inspecting Engineers*

Inspection of Cast Iron Pipe, Struc-  
tural Steel, Cement, Railroad Equip-  
ment, etc. Chemical Analyses of  
all kinds.

Representation in all Principal Cities  
Clark Bldg., BIRMINGHAM, ALA.

**C. E. SMITH & CO.**

CONSULTING ENGINEERS

2973 Railway Exch. Bldg., St. Louis, Mo.

Investigations, reports, appraisals, expert  
testimony, bridge and structural work, railway  
problems, electrification, grade crossing elimi-  
nation, foundations, highways, docks, water  
supply, river and flood protection, drainage  
and sanitation, power plants.

**WHEELER, WALTER H.**

*Designing and Cons. Engineer*

Investigations, Reports, Plans,  
Specifications, Supervision of  
Construction, Valuations for  
Structures, Bridges, Buildings,  
Dams, Mfg. Plants, etc.

Met. Life Bldg., Minneapolis, Minn.

**CLARENCE D. POLLOCK**

Member Am. Soc. C. E.

Consulting Engineer

Pavements, Highways, Drainage, Sew-  
erage, Town Planning and General  
Municipal Problems.

Reports, Specifications, Supervision.  
Park Row Building, New York City.

**SOUTHERN TESTING  
LABORATORIES, INC.**

Physical Tests on all kinds of  
Construction Materials

Inspection of Asphalt and Concrete Paving,  
Cast Iron Pipe, Structural Steel, Clay Pro-  
ducts, Cement, Crocked Lumber and the  
Scientific Division of Concrete Mixtures.

2227 First Avenue, So. Birmingham, Ala.

**Gilbert C. White, C. E.**

M. Am. Soc. C. E.

M. Am. Soc. M.E.

CONSULTING ENGINEER

Durham, N. C.

As organization of Civil, Mechanical,  
Electrical and Chemical Engineers.  
Waterworks, Streets, Power Plants.

**Alexander Potter, C. E.**

Hydraulics, Sanitation, Con-  
crete Structures Designed  
Executed.

50 Church Street, New York  
(Hudson Terminal) Tel: Cortland 5401

**DR. D. B. STEINMAN,**

M. Am. Soc. C. E., M. Am. Ry. Eng. Ass.  
CONSULTING AND DESIGNING  
ENGINEER

Bridges and other Structures. Engi-  
neering Projects. Design, Supervi-  
sion, Investigations, Reports, Val-  
uations, Advisory Service.

25 Church Street New York

**THOS. H. WIGGIN**

CONSULTING ENGINEER

415 Lexington Ave., New York City

Reports, Designs, Supervision,  
Valuation: Water Supply, Sewer-  
age, Flood Control, Tunnels.

**Clyde Potts**

30 CHURCH ST. NEW YORK

Civil and Sanitary Engineer

Sewerage and Sewage Disposal  
Works, Hydraulics, Water Works,  
Filtration, Reports, Plans and  
Estimates.

**TAYLOR, HENRY W.**

Consulting Engineer

Water Supply, Sewerage,  
Hydraulic Developments.

New York City, 149 Broadway

**S. B. WILLIAMSON**

Consulting Engineer

Lee H. Williamson, Associate

Members Am. Soc. C. E.

Water Supply, Hydro Electric Plants, Sewage  
Disposal, Handling Plants, Port Development,  
Reports, Design, Supervision, Appraisal.

Box 551 Charlottesville, Va.



Literature on Request.

**PACIFIC FLUSH-TANK CO.**

Singer Bldg.  
NEW YORK CITY

**Clean Sewers**

Miller Siphons pre-  
vent sewers clogging  
from accumulated re-  
fuse. They regularly  
flush out the filth.  
No moving parts. Our  
complete descriptive  
text books give all  
details.

4241 Ravenswood Ave.  
CHICAGO, ILL.

**DIXOYL****for CATERPILLARS**

A Scientifically Densified Mineral Oil in-  
suring 100 per cent lubrication in extremes  
of heat or pressure, in cold, in water or  
steam. Made in five densities.

For use wherever a  
heavy-bodied oil is  
required

**DIXOYL  
INCORPORATED**  
Manufacturers

Vanderbent & Duncan Ave.  
St. Louis, Mo.

**DIXOYL**

The offices of the CONTRACTORS AND ENGINEERS MONTHLY, 443 Fourth Ave., N. Y., are headquarters for information on Distributors' and Contractors' equipment. If you want catalogs, prices or names of manufacturers, let us help you



## Concrete must be right to get P.T.L. approval!

Cement testing and analysis has been one of the specialties of the Pittsburgh Testing Laboratory for many years.

Today the P. T. L. Certificate of approval is nationally recognized by municipal engineers and officials as authoritative.

*Bulletin 28 tells you how you utilize this dependable service on all concrete jobs under your jurisdiction.*

**PITTSBURGH TESTING LABORATORY**  
**PITTSBURGH - PENNA.**

BRANCH OFFICES IN PRINCIPAL CITIES



### The "High Sign"

THE WAUGH sign on a Rock Drill, Drill Steel Sharpener, Concrete Breaker or Clay Digger, is the contractor's assurance of high speed, high efficiency, and completely satisfactory performance.

**GARDNER-DENVER CO.**

Denver, Colorado  
Formerly  
The Denver Rock Drill Mfg. Company

### MERIT MACHINERY COMPANY

1613-21 North Broadway, St. Louis, Mo.

*Representing*

**SIDNEY MACHINE TOOL CO.**—

Famous Universal Woodworkers

**BEACH MANUFACTURING CO.**—

Contractors' Saw Rigs

*Also*

We carry a complete stock at all times of new and used woodworking machinery

### WANTED

Splendid opening for A-1 Contractors' Equipment Salesman who wants to live in Southern California. State education, experience, lines sold, age and salary expected.

*Address Box 127, Care of*

CONTRACTORS AND ENGINEERS MONTHLY  
443 Fourth Ave. New York, N. Y.

### REED & DUECKER, Inc.

171-175 North Main Street  
MEMPHIS, TENN.

*Representing*

Fairbanks-Morse Company  
Cleveland Wheelbarrow Company  
John A. Roebeling Sons Company  
Carbic Mfg. Company  
Clyde Iron Works  
Baldwin Tool Works  
Union Steam Pump Company  
Dodge Mfg. Company  
Weller Mfg. Company  
Frick Company

### Don't Delay Expensive Machinery

Milburn Portable Lights reproduce Daylight conditions—use any carbide—and are simple to operate.

*For night work*

*Ask for Booklet 223*

**THE ALEXANDER MILBURN CO.**

Baltimore, Md.

*Note our Distributors on following pages*

### F-D EQUIPMENT COMPANY

*Specialists in Fordson Tractor  
Equipment*

5219 E. Grand Ave. Dallas, Texas

*Representing*

Whitehead & Kales Co.  
The Wehr Co.  
The Trackson Co.  
The Perry Co.  
The Hughes-Keenan Co.  
Oklahoma Engineering & Fdy. Co.  
Schramm, Incorporated  
Oliver Chilled Flow Works  
Detroit Harvester Co.



# DISTRIBUTORS OF CONSTRUCTION EQUIPMENT

The following cards (arranged by states) show the names of dealers in contractors' equipment and supplies, with a record of the various lines handled. Buyers will find this list a convenient means of getting in touch with dealers who make a point of giving satisfactory service and prompt shipments.

## ALABAMA

### ALABAMA EQUIPMENT COMPANY

525 N. 28th Street

Birmingham, Ala.

#### Representing

REX Concrete Mixers & Pavers	CENTURY Cement Bag Cleaners
P & H Shovels & Cranes	WILLIAMSPORT Wire Rope
BARNES Pumps	FREEMAN Truck Turntables
ORD Concrete Finishing Machines	Dump Wagons & Trailers
RED STAR Wheelbarrows	Grader Blades, Tents & Flys
"TONCAN" Metal Culverts	Wheel and Drag Scrapers
CONNEAUT Hand Shovels	Grading and Rooter Plows
JONES-SUPERIOR Saw Rig	HELTZEL Road, Sidewalk, Curb and Gutter Forms
ACME Rollers & Crushers	Material Bins and Hoppers
MUNDY Hoists	Mattocks and R. H. Picks

### C. B. DAVIS ENGINEERING CO.

Brown Marx Bldg.

Birmingham, Ala.

CRANES  
CONVEYORS  
BELTS  
SCREENS

PUMPS  
BUCKETS  
GEARS  
SILENT CHAINS

#### Representing

Robins Conveying Belt Company  
Morgan Engineering Co.  
Nordberg Mfg. Co.  
Wheeler Mfg. Co.  
Aldrich Pump Company  
G. H. Williams Company  
William Ganschow Company

### HERBERT GAD COMPANY

Complete Line of Contractors' Equipment

Warehouse: 3828 First Avenue, So.

Mail Address: P. O. Box 148

BIRMINGHAM, ALA.

#### Representing

THE FOOTE CO., INC.—MultiFoote Pavers  
BAY CITY DREDGE WORKS—Dredges, Cranes, Skimmer Scoops & Tractor Shovels  
ERIE STEEL CONSTRUCTION CO.—Aggrometer Plants &clam Shell Buckets  
HOTCHKISS STEEL PRODUCTS CO.—Curb, Gutter, Sidewalk & Road Forms  
CHICAGO GEAR MFG. CO.—Weber Transport Trailers  
C. H. & E. MFG. CO.—Hoists, Pumps & Saw  
LUDINGHAUS-ESPENSCHIED WAGON CO.—Dump Wagons, and Motor Trucks

## ALABAMA

### The Going Road Machinery Co., Inc.

1624 1st Ave.

Birmingham, Ala.

#### Contractors' Equipment

#### Representing

Jaeger Machine Co.—Mixers, Hoist and Placing Plants.  
Cleveland Tractor Co.—Cletrac Tractors  
Austin-Western Road Machy. Co.—Road Building Equipment of all kinds.  
Domestic Engine & Pump Co.—Diaphragm and Force Pumps.

### G. C. PHILLIPS TRACTOR CO.

1625-31 Ave. B, South, Birmingham, Ala.

#### Representing

RUSSELL—Road Building Machinery  
BYERS—"Bear Cat" Cranes and Shovels  
HAISS—Loaders, Conveyors, etc.  
BAKER—Rotary Scrapers, Self-Loading Scrapers and Baker Maney Scrapers  
LA PLANT-CHOATE—Bulldozers, Dump Wagons, Trailers, etc.

### Smith-Meadow Supply Company Inc.

1629 Avenue "A"

Birmingham, Ala.

#### Representing

CLYDE IRON WORKS—Hoists and Derricks  
RANSOME CONCRETE MACHY. CO.—Mixers and Pavers  
McMYLER-INTERSTATE CO.—Shovels and Cranes  
JOHN DEERE FLOW COMPANY—Plows and Wheelbarrows  
BALDWIN TOOL WORKS—Alloy Steel Shovels  
BUFFALO STEAM PUMP CO.—Pumps  
BEACH MFG. CO.—Portable Saws

"Service That Merits Your Business"



## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## ALABAMA

**STANDARD POWER EQUIPMENT CO.**  
Birmingham Alabama

*Representing*  
**DAYTON WHIRLEY CO.**—Drainage Machines  
**MASSILLON POWER SHOVEL CO.**—Steam, Electric, Gasoline and Diesel Shovels  
**VERGAN-SCHMIDT CO.**—Tractors, Shovels and Graders  
**BUHL CO.**—Air Compressors  
**CLEVELAND ROCK DRILL CO.**—Rock Drills and Steels  
**REPUBLIC IRON WKS.**—Concrete Mixers, Hoists and Chutes  
**FOUR DRIVE TRACTOR CO.**—Tractors, Rollers, Etc.

*Representing*  
**ROGERS BROTHERS CORP.**—Heavy Trailers  
**CHASE FDY. & MFG. CO.**—Cars and Trucks  
**MID-WEST LOCOMOTIVE CO.**—Gasoline Locomotives  
**BUTLER BIN CO.**—Steel Storage Bins, Hoppers  
**UNION IRON WORKS**—File Drivers and Supplies  
**LEE TRAILER & BODY CO.**—Trailers, Dump Bodies  
**FOUR WHEEL DRIVE AUTO CO.**—Four Wheel Drive Trucks

## ALA.—ARIZ.—ARK.

**TURNER SUPPLY COMPANY**

N. W. Corner St. Louis & Commerce Sts.  
**MOBILE** *Representing:* **ALABAMA**  
**McKIERNAN-TERRY DRILL CO.**—File Hammer  
**INDEPENDENT PNEUMATIC TOOL CO.**—"Thos" Tools and Compressors  
**O. H. WILLIAMS CO.**—Clamshell & Dragline Buckets  
**ARCHER IRON WORKS**—Concrete Chuting Equipment  
**DOMESTIC ENGINE & PUMP CO.**—Pumps and Hoists  
**DOBIE FOUNDRY & MACHINE CO.**—Derricks  
**ORR & SEMBOWER**—Concrete Mixers & Hoists  
**AMERICAN STEEL & WIRE CO.**—"Monitor" Wire Rope

**LANSING COMPANY**—Barrows and Trucks  
**AMERICAN ROLLING MILLS CO.**—Genuine Armeto Ingot Iron  
**WYOMING SHOVEL CO.**—"Red Edge" Shovels & Scoops  
**LINK BELT COMPANY**—Crawler Cranes, Shovels & "Grizzly" Loaders  
**WESTERN WHEEL SCRAPER CO.**—Wheelers, Drags, Tumbler-bugs, Fresnoes, Scrapers, and Ploughs  
**BATES MFG. COMPANY**—Bar Ties

**JOHN D. TURNER**

921-22 Pioneer Bldg. 513 Shepherd Bldg.  
 Birmingham, Ala. Montgomery, Ala.  
**MATERIAL HANDLING EQUIPMENT**

*Representing*  
**BABER GREENE**—Conveyors, Ditchers and Loaders  
**NORDBERG**—Trackshifters & Shovel loaders  
**NORTHWEST**—Cranes, Draglines & Shovels  
**SHAW-ENOCHS**—"SHAWNEE" Power Graders  
**UNIVERSAL**—Truck Cranes

**Arizona Tractor & Equipment Co.**

238 W. Jefferson St., Phoenix, Arizona

*Distributors for:*

**J. D. Adams & Co.**  
**Buffalo-Springfield Roller Co.**  
**Caterpillar Tractor Co.**  
**Harnischfeger Corp.**  
**Blaw-Knox Co.**  
**The Hell Co.**—Hoists  
**C. H. & E. Mfg. Co.**

**Insley Mfg. Co.**  
**Killefer Mfg. Co.**  
**La Plant-Chaste Mfg. Co.**  
**Littleford Brothers**  
**Page Engineering Co.**  
**T. L. Smith Co.**  
**D-A Lubricant Co.**

**The Young & Vann Supply Co.**  
Birmingham, Ala.

Complete line of Contractors' Equipment and Supplies

*REPRESENTING*  
**Smith Concrete Mixers and Pavers**  
**Novo Hoists, Pumps, etc.**  
**Blaw-Knox Steel Forms, Batch Plants, Clam Shell Buckets**  
**Worthington Pumps and Air Compressors**  
**Thew Gas, Steam and Electric Shovels**  
**Baker Hackfillers and Unloaders**  
**Archer Concrete Towers**  
**Reg-Watson Dump Wagons**  
**Red Edge Shovels and Picks**  
**General Wheelbarrows**  
**Caray Elastite Expansion Joint**  
**M. & M. Form Clamps**

**ARKANSAS FOUNDRY COMPANY**  
IRON AND STEEL

Little Rock Arkansas

*Representing*

**KOEHRING CO.**—Mixers, Pavers, Shovels and Draglines  
**NATIONAL STEEL FABRIC CO.**—Wire Mesh  
**TRUSCON STEEL CO.**—Steel Sash, Metal Lath and Building Products  
**MAJESTIC CO.**—Coal Chutes and Building Products  
**IRVING IRON WORKS**—Subway Grating  
**CARTER BLOX-ON-END FLOORING CO.**—Industrial Wood Flooring

*Also*

Structural and Reinforcing Steel and Steel Building Products

**LAWRENCE-GOODLING CO., Inc.**  
161-165 N. Water St. Mobile, Ala.

*Representing*  
**Gallion Iron Wks. & Mfg. Co.**—Road Machines, Road Rollers, etc.  
**Cleveland Tractor Co.**—Tractors, 4 Sizes  
**A. B. Farquhar Co., Ltd.**—Saw Mills, Boilers and Engines  
**Sidney Steel Scraper Co.**—Wheelers, Drag Scrapers, Road Plows, etc.  
**Gordon Hollow Blast Grate Co.**—Edgers and Trimmers  
**Oliver Ames Corporation**—Shovels  
**Ransome**—Concrete Mixers

*If you are located in Western Florida, Southern Mississippi or Alabama let us serve you.*

**JOE LYONS MACHINERY CO.**

*Contractors' Equipment and Supplies*  
 112 Louisiana St. Little Rock, Ark.

*Representing:*

**REX**—Mixers and Pavers  
**BLAW-KNOX**—Curb, Gutter and Road Forms, Bins, Batchers, Clamshell Buckets, Truck Turntables  
**RED STAR**—Wheelbarrows and Concrete Carts  
**RED EDGE**—Shovels and Picks  
**C. H. & E.**—Pumps, Saw Rigs and Hoists.  
**AMERICAN**—Wire Rope.  
**CLIMAX**—LEBOI — **FULLER & JOHNSON**—Engines  
**OIL FULL**—Road Tractors  
**BATES**—Bar Ties.  
 Derricks, Hoists, Shovels, Cranes and Draglines  
 Also anything else a contractor uses

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## CALIFORNIA

**The BROWN-BEVIS CO., Inc.**  
470 East Third St., Los Angeles, Cal.

## DISTRIBUTORS

T. L. Smith Co.—Concrete Mixers, Pavers and Excavators  
J. D. Adams and Co.—Adams Leaning Wheel Graders  
Sullivan Masby, Co.—Compressors, Hoists  
Wood Shovel & Tool Co.—Wood Molybdenum Shovels  
Lakewood Engineering Co.—Concrete Placing Machinery and Road Finishers  
Geo. Halsey Mfg. Co.—Truckloaders and Conveyors  
Barnes Mfg. Co.—Barnes Pumps  
The Owen Bucket Co.—Clam Shell Buckets  
The Buckeye Traction Ditcher Co.—Curb and Trench Ditchers  
Rex-Watson Corp.—Dump Wagons  
Universal Crusher Co.—Crushers  
Traylor Engineering & Mfg. Co.—Rock Crushing Equipment  
Minerath Tractor Co.—Tractors  
Four Wheel Drive Auto Co.  
Littleford Bros.—Tar and Asphalt Heaters, etc.

Member: Associated Equipment Distributors

## CALIFORNIA

**Construction Machinery Co.  
of California**

455 E. 3d St. Los Angeles, Calif.

American Saw Mill Machinery Company  
Saegen Derrick Company  
Construction Machinery Co., Waterloo, Iowa  
Sidney Steel Scraper Co., Barrows only  
Indiana Rolling Mills Shovels  
Cresson Morris Company  
Associated M'f'rs. Gas Engines  
Norris K. Davis Company  
H. B. Smith Company  
H. C. Wood  
Worth Machinery Manufacturers

**COAST MACHINERY CORPORATION**464 East Third St., Los Angeles, Calif.  
829 Folsom Street, San Francisco, Calif.

## Representing:

T. L. SMITH COMPANY—Concrete Mixers & Pavers (S. F. Territory)  
CLIMAX ENGE. CO.—Industrial Gas Engines  
CURTIS PNEUMATIC MACHINERY CO.—Compressors, Hoists, Trolleys  
CUSHMAN MOTOR WORKS—Gas Engines  
UNIVERSAL MOTOR CO.—Gas Engines  
CONCRETE SURFACING MACHY. CO.—Concrete Surfacers and Finishers (I. A. Territory)  
DEMING PUMP COMPANY—Pumps  
HUMPHREYS MFG. CO.—Power Pumps  
RALPH B. CARTER CO.—Diaphragm Pumps

**ESSICK and COMPANY**

1928 Santa Fe Ave., Los Angeles, Calif.

## Representing

NOVO ENGINE COMPANY  
RANSOME CONCRETE MACHY. CO.  
C. D. EDWARDS MFG. CO.  
STANDARD STEEL WORKS  
PEERLESS MACHINERY CO.  
IDEAL CONCRETE MACHY. CO.  
UNIVERSAL HOIST MFG. CO.  
KELLOGG AIR COMP. MFG. CO.  
THE DE VILBISS MFG. CO.

**COLLINS-KAY MACHINERY CO.**

438 East 3rd St., Los Angeles, Calif.

## Representing

RAY CITY FDT. & MACHINERY WKS.—Gasoline Truck Cranes  
ERIE STEEL CONSTRUCTION CO.—Clamshell Buckets and Aggrementers  
FATE-ROOT-HEATH CO.—Gasoline Locomotives  
THOMAS ELEVATOR CO.—Electric and Gasoline Hoists  
NORTHWEST ENGE. CO.—Gasoline & Full Diesel Shovels, Draglines and Cranes  
NORTHERN ENGE. CO.—Electric Traveling Cranes  
ALLOY STEEL CO.—Roller Bearing Jaw Crushers—All Sizes  
BUHL CO.—Portable Air Compressors and Hoists

**GARLINGHOUSE BROS.**

2044 Santa Fe Ave., Los Angeles, Cal.

## Southern California Distributors For:

Blaw-Knox Co.—Steel Forms, Road Building Equipment  
Dobbie Fdy. & Mach. Co., Derricks  
Insley Mfg. Co.—Concrete Placing Equipment, Excavators  
Lidgerwood Mfg. Co.—Hoists, Cableways  
Smith Engineering Wks.—Crushers and Gravel Plant Equipment  
The Knickerbocker Company—Concrete Mixers and Saw Rigs  
A. Leschen & Sons Rope Co.—Wire Rope  
McKiernan-Terry Drill Co.—Pile Hammers  
Atlas Engineering Co.—Conveyors

Telephone, TUCKer 1051

**CONCRETE MACHY. & SUPPLY CO.**

2014 Santa Fe Ave., Los Angeles, Calif.

## Construction and Industrial Equipment

## Representing

REX Mixers, Pavers  
BUTLER Bins, Batchers  
WILLIAMS Buckets  
NATIONAL Hoists  
ARCHER Hoist Tower & Spouting Equipment  
BLYSTONE Plaster and Mortar Mixers  
ERIE Steam Shovels  
CONTINENTAL Engines  
NATIONAL Pile Hammers  
LE ROI Engines  
RED STAR Wheelbarrows and Carts  
CONNEAUT Shovels  
DOMESTIC Pumps

Concrete Pipe Forms

Members: Associated Equipment Distributors

**LEIGH M. RAILSBACK**

115 So. Angeles St., Los Angeles, Cal.

## Representing

GALLION Road Machinery, Rollers, Graders, etc.  
LEACH Concrete Machinery  
RELIANCE Crushers and Sweepers  
ANDRESSEN Road Repair Outfits  
RAY CITY Shovels and Cranes  
MCCORMICK-DEERING Industrial Tractors  
GRECO Pavement Heaters  
MONARCH Loaders  
JOLIET Hoists  
NATIONAL Traffic Markers

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## CALIFORNIA

**SHEPHERD-CROOK, Inc.**

514 West 12th St. Los Angeles, Calif.

*Representing*

CATERPILLAR Tractors  
 RUSSELL Graders  
 KILLEFER Road Tools  
 OSGOOD Cranes, Shovels and Drag Lines  
 BAKER MANEY Scrapers  
 LaPLANT-CHOATE Wagons

**SMITH BOOTH USHER CO.**

LOS ANGELES

228-38 Central Ave., 1910 Santa Fe Ave.

*Distributors for:*

Acme Road Machinery Co.	The Jaeger Machine Co.
Archer Iron Works	Jaeger Portable Power Corp.
Barber Greene Co.	C. S. Johnson Co.
The Buhl Company	Lincoln Electric Co.
The Byers Machine Co.	Morris Machine Works
Carr Sub-Grader Mfg. Co.	Nelson Bros. Co.
Clyde Iron Works	Page Engineering Co.
Easton Car & Constr. Co.	Geo. D. Roper Corp.
The Foote Co.	Sauerman Bros., Inc.
Freeman Mfg. Co.	Solano Iron Works
A. W. French & Co.	Thew Shovel Co.
Goulds Pumps, Inc.	Geo. D. Whitcomb Co.
Hercules Motors Corp.	Ward Plow Co.
Hetzl St. Fm. & Ir. Co.	Williams Hoist Co.
Iowa Mfg. Co.	

**R. T. McCLELLAND**4030 Hollis Street  
Oakland, Calif.*Representing*

Ransome Concrete Machinery Co.  
 Mixers, Pavers, Towers, Spouting  
 Novo Engine Co.  
 Engines, Hoists, Pumps, Compressors  
 Blaw-Knox Co.  
 Steel Forms, Clamshell Buckets, Batchers Plants  
 National Hoisting Engine Co.  
 Steam Pile Hammers  
 Steam Hoists

**EDWARD R. BACON COMPANY**CONSTRUCTION  EQUIPMENT

Folsom at 17th Street

San Francisco

ACME Gasoline Rollers  
 ADAMS' Leasing Wheel Graders  
 ORD Concrete Road Finishers  
 BARNES Road Pumps  
 BURCH Stone Spreaders  
 HERCULES Power Units  
 JOHNSON Batch Hoppers  
 JAEGER Concrete Mixers  
 MULTIFOOTE Road Pavers  
 MADSEN Asphalt Plants  
 GENERAL Gas Shovels, Cranes and Ditchers

MEAD-MORRISON Grab Buckets and Hoists  
 LAKEWOOD Chuting Plants  
 CEDAR RAPIDS Crushing Outfits  
 WHITCOMB Locomotives  
 McKERNAN-TERRY Pile Hammers  
 FREEMAN Turntables  
 CARR Subgraders  
 EASTON Industrial Cars  
 OSGOOD Shovels—Steam and Gas

Member: Associated Equipment Distributors

## CALIFORNIA

**NORRIS K. DAVIS**

400 Seventh St. San Francisco, Calif.

*Representing*

CONSTRUCTION MACHY. CO.—"Wender"  
 Mixers, Hoists, Pumps, etc.  
 LE BOY—Engines  
 MINNEAPOLIS STL. & MACHY. CO.—Twin City Engines  
 W. S. MEADOWS—Seal Tight Expansion Joints  
 ARCHER IRON WORKS—Concrete Placing Equipment  
 METAL FORMS CORP.—Forms for Const. Construction  
 CLEVELAND WHEELBARROW CO.—Wheelbarrows  
 G. H. WILLIAMS CO.—Clamshell Buckets  
 Mixers, Concrete and Mortar Gas or Electric Hoists

**ENGINEERING PRODUCTS CO.**

RIALTO BUILDING SAN FRANCISCO

*Representing*CLARK CAR COMPANY  
SEATTLE FROG & SWITCH COMPANYINDUSTRIAL, QUARRY AND  
CONTRACTORS  
CARS AND TRACKRAIL — FROGS — SWITCHES  
TRACK MATERIALS**GARFIELD & CO.**

Hearst Bldg. San Francisco, Calif.

*Representing*

Erie Steam Shovel Co.	Plymouth Locomotive
Insley Mfg. Co.	Works
J. S. Mundy Hoisting	Thomas Elevator Co.
Eng. Co.	Erie Steel Constr. Co.
The Parsons Company	Page Engrg. Co.
Leach Company—Concrete Mixers	

**HARRON, RICKARD & McCONE CO.**139 Townsend St. 2205 Santa Fe Ave.  
San Francisco, Calif. Los Angeles, Calif.*REPRESENTING*

American—Hoists & Derrick	Kearney — Shovels, Cranes
Bauch—Portable Saws	Draglines, Pavers, Mixers
Beebe—Hand Hoists	Leffel—Power Unit
Blaw-Knox — Buckets, Steel	Littleford—Asphalt Equipment
Forms, Bins	Parks—Portable Woodworking
C. H. & E.—Hoists, Pumps,	Machinery
Saws, Mixers	Smithell — Super Vibrating
Handy—Back Cleaners, Balers	Screens
Ingersoll-Rand — Compressor	Stirling—Wheelbarrows & Carts
& Drills	Vulcan—Locomotives
Keystone—Power Shovels	Vulcan-Warrington—Pile Driving
Kwik-Mix—Mixers	Hammers

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

## CALIF.—COLO.

**THE STUART S. SMITH CO.**

19th &amp; Indiana Sts., San Francisco, Cal.

*Representing*

Boyer Fire Apparatus Co.  
 Chausse Oil Burner Co.  
 Elgin Street Sweeper Co.  
 Galion Iron Works & Mfg. Co.  
 Lakewood Engineering Co.  
 Northern Conveyor & Mfg. Co.  
 Orton Crane & Shovel Co.  
 Chas. T. Topping Machinery Co.

**SMITH BOOTH USHER CO.**

50 Fremont Ave., San Francisco, Calif.

*Representing*

Barber-Greene Co.	The Maxim Silencer Co.
Butler Bin Co.	Milwaukee Locomotive Co.
The Byers Machine Co.	Morris Machine Works
Carbie Mfg. Co.	The Owen Bucket Co.
Chain Belt Co.	Geo. D. Roper Corp.
Clyde Iron Works Sales Co.	Sauserman Bros., Inc.
Goulds Pumps, Inc.	Sterling Pump Works
Hercules Corporation	Thev Shovel Co.
Le Roi Company	Walt Car & Wheel Co.
Lincoln Electric Co.	Worthington Pump and Machinery Corp.

**CORNELL TRACTOR CO.**227 The Alameda,  
San Jose, Calif.363 Main St.  
Salinas, Calif.*Distributors*

Caterpillar	Tractors
Killefer	Road Machinery
Killefer	Farm Machinery
Russell	Road Machinery
D-A	Tractor Lubricant

**THE BURNITE MACHINERY CO., Inc.**  
518 BOSTON BLDG. DENVER, COLO.*Representing*

T. L. Smith Company, Concrete Mixers and Pavers  
 Smith Engineering Works, Crushers and Screening Plants  
 Parsons Co., Trench Excavators and Backfillers  
 Union Iron Works, File Drives and Grout Mixers  
 Mead-Morrison Co., Hoists and Tractors  
 Orton Crane & Shovel Co., Locomotive, Truck Cranes, etc.  
 Geo. Hales Mfg. Co., Truck Loaders and Conveyors  
 Archer Iron Works, Concrete Chuting Equipment  
 Barnes Mfg. Co., Portable Pumps and Compressors  
 Northwest Engr. Co., Crawler Cranes, Shovels and Draglines  
 Elgin Corp., Elgin Pickup Street Sweepers  
 Leach Company, Portable Saw Rigs  
 Erie City Iron Works, Rollers, Engines, Coal Pulverizers  
 Foster Wheeler Corp., Condensers and Cooling Towers  
 The Permutt Co., Water Softeners and Filters  
 The Roto Co., Turbine Tube Cleaners  
 Chicago Automatic Conveyor Co., Portable Conveyors

## COLORADO

**CLINTON AND HELD CO.**

1501-1511 Wazee St., Denver, Colo.

*Distributors*

Caterpillar Tractors  
 Stockland Road Mach. Co.—Graders and Fresno  
 Killefer Mfg. Co.—Road Scarifiers and Scrapers  
 LaPlant-Cheate Mfg. Co.—Tractor Trailers—  
 Snow Plows—Hydraulic Scrapers  
 Baker Mfg. Co.—Snow Plows and Scrapers  
 Union Iron Works—Sargent Snow Plows  
 Illinois Wire & Mfg. Co.—Big Red Snow Fence  
 D-A Lubricant Co.—Tractor Lubricants  
 Athey Truss Wheel Co.—Truss Wheel Assemblies  
 Ward Plow Co.—Steel Beam Road Plows  
 Clinton Flat Bottom Ditchers  
 Hansome Concrete Mach. Co.—Mixers

**JOHN W. FINK COMPANY**

1529 16th St.

Denver, Colo.

*Representing*

ROME MFG. CO.—Graders  
 DUPLEX MFG. CO.—Road Maintainers  
 SPEEDER MACHY. CO.—Gas  
 Shovels, Cranes, Draglines, Skimmers  
 HUBER MFG. CO.—Gas Rollers  
 DAVIS MFG. CO.—Land Levelers

*Paul H. General*  
 INDUSTRIAL & CONSTRUCTION  
 EQUIPMENT

NATIONAL BANK BLDG.  
DENVER, COLO.

P & H. Shovels, Cranes, Draglines, Trench Machines Northern Portable and Sta- tionary Conveyors. Plymouth Gasoline Loo- comotives. Archer Steel Tower and Con- crete Distributing Systems. Owen Clamshell Buckets.	Ohio Locomotive Cranes. Erie Aggrigator Plants. McKernan-Terry File Ham- mers. Gruendler Crushing and Screening Plants. Highway 3-4-6-8 Wheel Trail- ers. Page Dragline Buckets
--	---

**LINDROOTH, SHUBART & CO.**

521 Boston Bldg., Denver, Colo.

*Representing*

<b>LINK-BELT CO.</b>	<b>INSLEY MFG. CO.</b>
Portable Loaders	Ditchers
Cranes	Cranes
Draglines	Draglines
Shovels	Shovels
Belt Conveyors	Man Hoists
Elevators	Concrete Placing
Sand and Gravel Plants	Equipment
PIONEER Slack Line Excavators	

## COLORADO—CONN.

**H. W. Moore Equipment Company**

Construction Machinery  
Tractor Equipment  
Earth Handling and Road Building Machinery  
Sixth and Acoma Streets, Denver, Colorado

Gallon Iron Wks. & Mfg. Co. Chausse Oil Burner Co.  
Lakewood Engineering Co. Ward Pile Co.  
Jaeger Machine Co. Sagan Derrick Co.  
General Excavator Co. International Harvester Co.  
Anthony Co. Iowa Manufacturing Co.  
E. D. Einyers Co. Sidney Steel Scraper Co.  
Geo. D. Whitcomb Co. Universal Crane Co.  
The Wehr Co. Erected Machinery Co.  
J. M. Lardenburger

Member of Associated Equipment Distributors

**THE HERBERT N. STEINBARGER CO.**  
CONSTRUCTION EQUIPMENT

1640-1648 Wazee St., Denver, Colo.

DISTRIBUTORS  
Bryant Steam, Gas and Electric Shovels and Draglines  
Vulcan Steam and Gasoline Locomotives  
Clyde Hoists and Derricks  
Russell Graders, Scrapers, Gravel Handling Equipment  
Bassman Power Scrapers, Cableway Excavators  
Butler Bins and Hoppers  
Metal Form Sidewalk, Curb and Road Forms  
Rex Concrete Pavers, Building Mixers  
Williams Buckets  
Blystone Plaster and Mortar Mixers  
System Column Clamps, Adjustable Shores  
Buffalo-Springfield Steam and Gasoline Rollers  
Esterline Centrifugal and Pressure Pumps  
Curtis Portable Compressors  
Harding Drills and Pavement Breakers  
Member: Associated Equipment Distributors

**WILSON MACHINERY COMPANY**

Construction Machinery

1936 Market St. Denver, Colorado

## Representing

Archer Iron Works Construction Mch. Co.  
Austin - Western Road Hell Company  
Machinery Co. Heister Locomotive Co.  
Barber-Greene Co. Koehring Co.  
Blaw-Knox Co. Marshall-Wells Co.  
Buckeye Traction Monarch Tractors Corp.  
Ditcher Co. Mundy Hoist Eng. Co.  
Byers Machine Co. Page Engineering Co.  
C. H. & R. Mfg. Co. Waukesha Motor Co.  
Cleveland Wheelbarrow Western Wheel  
Company Scraper Company

**The K. B. NOBLE CO.**

## REPRESENTING AMONG OTHERS

RUSSELL: Graders  
EASTON: Industrial Equipment  
LEROI: Power Units  
"ATLAS": Mortar & Plaster Mixers  
NATIONAL: Hoists  
OWEN: Clamshell Buckets  
PULSOMETER: Steam Pumps  
"REX": Mixers, Pavers  
SAGGEN: Derricks  
JONES: Super Woodworkers  
SULLIVAN: Compressors, Drills  
UNIVERSAL: Crushers, Bins, Silos  
HUMPHRIES: Pumps  
"20th CENTURY": Woodworkers  
"HERCULES": Engines

Member: Associated Equipment Distributors.

HARTFORD, CONNECTICUT

C  
O  
N  
N  
E  
C  
T  
I  
C  
U  
T

M  
A  
S  
S  
A  
C  
H  
U  
S  
E  
T  
S

## CUBA—D. C.—FLA.

**HAVANA FRUIT COMPANY**

Habana

Cuba

## Representing

Caterpillar Tractor Co. Mundy Hoisting Engine Co.  
Russell Grader Mfg. Co. Erie Steel Construction Co.  
Barber-Greene Co. Atlas Engineering Co.  
Chain Belt Co. Harnischfeger Corp.  
D-A Lubricant Co. Universal Road Machinery Co.  
La Plant-Chaste Mfg. Co. Littleford Brothers  
The Martin Wagon Co. Chas. Hyatt & Co.  
The Barnes Mfg. Co. Adams Manufacturing Co.  
The Kilofer Mfg. Co. Sterling Wheelbarrow Co.  
Little Red Wagon Mfg. Co. Denver Rock Drill Mfg. Co.  
Lakewood Engineering Co. The Huber Manufacturing Co.  
Aeroll Burner Company Fox Brothers & Co., Inc.  
Easton Car & Construction Co. Four Wheel Drive Auto Co.

Member: Associated Equipment Distributors

**J. Z. HORTER COMPANY**

Obispo and Oficios Streets  
HAVANA, CUBA

## Representing

T. L. Smith Company  
Stockland Road Machinery Company  
National Hoisting Engine Company  
Monarch Tractors, Inc.  
Twin City Tractors

**THE HENRY H. MEYER CO.**

1114 Ninth St., N. W. Washington, D. C.

## Representing

Austin Western Road Mach. The Harrington Co.  
Co. Union Iron Works  
Link-Belt Company A. Leschen & Sons Rope Co.  
Blaw-Knox Co. Lidgerwood Manufacturing Co.  
Boston & Lockport Block Co. Byers Machine Co.  
C. H. & E. Manufacturing Co. Parsons Co.  
Chain Belt Company Pulsmeter Steam Pump Co.  
Conner & Company Sterling Wheelbarrow Co.  
E. I. du Pont de Nemours & Co. Templeton-Kenly Co.  
Inc. Universal Road Mach. Co.  
Duff Mfg. Co.

MEMBER OF ASSOCIATED EQUIPMENT DISTRIBUTORS

**GILL MACHINERY COMPANY**

Room 1322, Barnett Natl. Bank Bldg.  
JACKSONVILLE, FLA.

## REPRESENTING:

VEHN-BEVERIN MACHINE CO.—Semi-Diesel  
Oil Engines  
DOMESTIC ENG. & PUMP CO.—Pumps, Hoists  
PENNSYLVANIA CRUSHER CO.—Steel Roll  
Rock Crushers  
F. E. MYERS & BROS.—Buildings Pumps  
INGERSOLL-RAND, INC.—Compressors and  
Rock Drilling Equipment  
WESTINGHOUSE ELECTRIC & MFG. CO.—  
Generators and Motors  
RANSOME CONCRETE MIXERS  
ELECTRIC LIGHT, WATER and ICE PLANT  
INSTALLATION  
LARGE STOCKS CARRIED IN JACKSONVILLE



## FLORIDA

**McDONALD & BURGMAN**

8 Riverside Viaduct Jacksonville, Fla.  
West Palm Beach, Miami

*Distributors of Dependable Machinery*

"Caterpillar" Tractors  
Austin Western Road Machinery  
Erie Gas-Air and Steam Shovels  
Universal Cranes  
Williams Clamshell Buckets  
La Plant-Ostea Tractor Trailers & Bulldozers  
Bonney Loaders  
D-A Lubricant for Tractors

*If it's dirt moving equipment you need, we can furnish it from stock.*

Member: Associated Equipment Distributors

## FLORIDA

**I. E. SCHILLING COMPANY**

125 N. E. 6th St.

Miami, Fla.

*Representing*

Owen Bucket Co.	Miles Mfg. Co.
Ideal Conc. Machy. Co.	Mac Whyte Co.
Saagen Derrick Co.	Le Roi Engine Co.
T. L. Smith Co.	Construction Mch. Co.
Clyde Iron Works	Ryan Mfg. Corp.
Starling Wilbur. Co.	Wyoming Shovel Wks.
Beach Mfg. Co.	General Electric Co.
	Domestic Engine & Pump Co.

**M. D. MOODY**

Office:  
402 Masonic Temple

Warehouse:  
No. 2 A. C. L. Yards

Jacksonville, Florida

*Representing*

J. D. Adams & Company	Freeman Mfg. Company
American Casting Company	Chas. Hyatt & Company
American Tar Products Co.	Littford Brothers
Buffalo-Springfield Roller Co.	Lakewood Engineering Co.
Cyclone Pumps Company	Mead-Morrison Mfg. Co.
Elgin Sales Corporation	Rawls Mfg. Company
E. D. Ebberts & Company	Rex Watson Corporation
Erie Steel Company	Talmith Engineering Co.
E. W. C. Crawler Type	
Treasure	

**CONTRACTORS EQUIPMENT CO.**

Miami, West Palm Beach, Daytona, Jacksonville, Florida

*Representing*

Ingersoll-Hand Compressors and Tools	Barnes Power Pumps
Bax Pavers and Mixers	Ord Conc. Rd. Finishers
Basick Plaster Mixers	Street Bros. Hoists and Slacklines
Butler Bins and Batches	Hazard Wire Rope
Hotchkiss Steel Forms	Roobers
Lansing Barrows and Carts	Jones Superior Saw Rigs
	LeBoi Engines
	Synton Hammers
	Goodyear Belt and Hose

**D. E. FISHBACK**

ORLANDO

FLORIDA

*DISTRIBUTOR*

Fairbanks-Morse & Co., Oil Engines, Pumping Machinery, Electric Motors, Home Light and Water Plants.  
The Jaeger Machine Co., Concrete Mixers for every purpose.  
Cincinnati Rubber Co., Dredging Sleeves, Section and Discharge Hose.  
O. K. Clutch & Mach. Co., Hoisting Machinery.  
American Saw Mill Mach. Co., Portable Woodworkers, Saw Benches, Etc.  
Gould's Pumps, Inc., Power, Diaphragm and Hand Pumps.  
Cement Block Mach. Co., "National" Concrete Block Machines.  
Chicago Pneumatic Tool Co., Portable and Stationary Air Compressors, Air Lift Pumps, Etc.  
Pipe, Valves and Fittings.  
STOCK CARRIED IN ORLANDO

**BURRESS-CLARK MACHINERY CO.**

Tampa, Florida

*EXCLUSIVE DISTRIBUTORS FOR:*

Chain-Belt Co., Box Mixers  
Street Bros., Gas, Steam & Electric Hoists  
Street Bros., Derricks and Cableways  
Barnes Mfg. Co., Power Pumps  
Ingersoll-Hand Air Compressors  
Speeder Shovels and Cranes  
Lakewood Engr. Co., Chuting Equipment  
H. W. Roos Co., Roobers  
Jones Superior Saw Rigs  
Haise Loaders  
Saagen Derricks, Winches, etc.  
Butler Bins & Measuring Hoppers  
Blystone Mfg. Co., Plaster & Batch Mixers  
COMPLETE STOCK IN TAMPA  
Member: Associated Equipment Distributors

**L. D. LLEWELLYN, INC.**

MIAMI

FLORIDA

*REPRESENTING:*

American Mfg. Co.	Herodes Corp.
American Saw Mill Machy. Co.	Independent Pneumatic Tool Co.
American Steel & Wire Co.	Jaeger Machine Co.
Anchor Concrete Mach. Co.	Jackson Mfg. Co.
Archur Iron Works	Jeffrey Mfg. Co.
Austin-Western R'. Mach. Co.	Wm. H. Keller, Inc.
Barber-Greene Co.	Matheson Conveyor Co.
Blystone Mfg. Co.	Metal Forme Corp.
Chicago Pneumatic Tool Co.	Page Engineering Co.
Cleveland Wheelbarrow & Mfg. Co.	Northwest Eng. Co.
Denver Rock Drill Mfg. Co.	Novo Engine Co.
Electric Welding Co.	Rochester Can Co.
Erie Steel Const. Co.	Saagen Derrick Co.
Fairbanks, Morse & Co.	Schramm, Inc.

Member: Associated Equipment Distributors

**COULTER-HARTEQUIPMENT CO.**

407 Eunice Ave.

Tampa, Florida

*Branch Offices:*

2127 First Avenue, N. W. 930 West Bay Street  
Miami, Florida Jacksonville, Fla.  
*Representing*  
KOEHRING CO.—Shovels, Cranes, Draglines, Mixers, Pavers  
Bar Benders and Cutters, Sub-Grade Planers  
BLAW-KNOX CO.—Bins, Batches, Inundators, Forms, Clam Shell Buckets and Turntables  
NATIONAL HOISTING ENGINE CO.—Pile Hammers, Hoists  
C. H. & E. MFG. CO.—Pumps, Saw Rigs and Hoists  
BATES MANUFACTURING CO.—Tractors  
RYAN MFG. CO.—Motor-Controlled Grading Machines  
H. D. CONKEY CO.—Wheelbarrows  
METALWELD SERVICE CORP.—Air Compressors  
CLEVELAND ROCK & DRILL CO.—Rock Breakers, Drills  
PAGE ENGINEERING CO.—Dragline Buckets  
KOHLER COMPANY—Lighting Plants  
LE ROI ENGINE CO.—Gas Engines  
HANDY SACK BALER CO.—Sack Cleaners and Balers

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

FLA.—GEORGIA

GEORGIA

**ODGEN MACHINERY CO. Inc.**  
 17th Street and First Ave., Tampa, Fla.
*Representing*

NORTHWEST ENGR. CO.—Cranes, Shovels, Draglines, and Pull Shovels  
 PAGE ENGINEERING CO.—Dragline Buckets  
 OWEN BUCKET CO.—Clam Shell Buckets  
 DOMESTIC ENGINE & PUMP CO.—Diaphragm, Centrifugal, and Force Pumps, Hoisting Engines, Etc.  
 AMERICAN STEEL & WIRE CO.—Wire Rope  
 BARBER-GREENE CO.—Ditchers, Loaders and Conveyors  
 FOOTE COMPANY, INC.—Pavers  
 ACME ROAD MACHINERY CO.—Rollers  
 KOHLER COMPANY—Light Plants

**W. E. AUSTIN MACHINERY COMPANY**

128 Marietta St., Atlanta, Ga.

*Contractors' Machinery*

for the building of

**HIGHWAY, RAILWAY, MINE, QUARRY,  
 AND GENERAL CONSTRUCTION WORK**
*REPRESENTING*

Anco Hoisting Tilt Huber Mfg. Co.  
 Insley Mfg. Co. Kent Machine Co.  
 National Hoist Eng. Co. Anchor Concrete Mch.  
 AUSCO Concrete Mixers Co.  
 Fate-Root-Heath Co. Saagen Derrick Co.  
 Member: Associated Equipment Distributors

**YANCEY TRACTOR COMPANY**  
 109-115 Becker Ave. Albany, Ga.
*Representing*

"CATERPILLAR" Tractors  
 ADAMS Graders  
 ATHEY Truss Wheels  
 BAKER-MANEY Automatic Wheelers  
 WATSON Dump Wagons and Trailers  
 KILLEFER Road Rippers, Rotary Scrapers  
 WIARD Flows  
 Wheel and Drag Scrapers  
 "RED EDGE" Shovels, Picks  
 "RED STAR" Wheelbarrows and Carts  
 JONES SUPERIOR Saw Rigs  
 KOPPEL Cars and Trunk  
 MUNDT Hoints  
 BARNES Pumps  
 BUFFALO-SPRINGFIELD Rollers  
 CHICAGO Auto. Conveyors  
 FREEMAN Truck Turntable  
 HVASS Flashes, Sweepers, etc.  
 HERCULES Gas Engines  
 HOTCHKISS Steel Forms  
 INGERSOLL-RAND Compressors  
 JOHNSON Bins and Hoppers  
 ORD Concrete Road Surfaces  
 McKERNAN-TERRY File  
 HAMMERS  
 P&H Shovels and Cranes  
 WILLIAMS Buckets  
 REX Concrete Mixers, Pavers

**SOUTHEAST SUPPLY COMPANY**

 332 Edgewood Avenue  
 ATLANTA, GEORGIA
*Representing:*

Cleveland Tractor Company  
 Euclid Crane & Hoist Company  
 Austin-Western Road Machy. Co.

**EDGAR ALEXANDER, Inc.**  
 501-3 Whitehall St. Atlanta, Ga.
*Representing*

The Y. L. Smith Co., Concrete Mixers and Pavers  
 Orion Crane & Shovel Co., Cranes, Excavators, Shovels  
 Jones Superior Woodworkers, Saw Equipment  
 Universal Road Machinery Co., Reliance Crushers, Street Sweepers, Oilers, Car Unloaders, etc.  
 Hottel Steel Form & Iron Co., Steel Forms for concrete work  
 Buffalo-Springfield Roller Co., Kelly-Springfield Rollers  
 Littleford Brothers, Littleford Tar and Asphalt Heaters  
 George Hale Mfg. Co., Trunk Loaders, Portable Belt Conveyors, etc.  
 Arthur Iron Works, Concrete Mixers and Cams  
 Bay City Dredge Works, Motor Cranes, "One-Man Excavators."  
 Glenox Engineering Co., Internal Combustion Engines  
 South Manufacturing Co., Saw Tables  
 Karsner Incubator Co., Incubators for Homes and Institutions  
 Bytstone Manufacturing Co., Concrete and Plaster Batch Mixers  
 M. & M. Form Clamp Co., Column Clamps

**YANCEY BROTHERS, Inc.**

634 Whitehall St., S. W. Atlanta, Ga.

"CATERPILLAR" Tractors  
 ADAMS Graders  
 ATHEY Truss Wheels  
 BAKER-MANEY Automatic Wheelers  
 WATSON Dump Wagons and Trailers  
 KILLEFER Road Rippers, Rotary Scrapers  
 WIARD Flows, Wheel and Drag Scrapers  
 "RED EDGE" Shovels, Picks  
 "RED STAR" Wheelbarrows and Carts  
 JONES-SUPERIOR Saw Rigs  
 KOPPEL Cars and Trunk  
 MUNDT Hoints  
 BARNES Pumps  
 BUFFALO-SPRINGFIELD Rollers  
 CHICAGO Auto. Conveyors  
 FREEMAN Truck Turntables  
 HVASS Flashes, Sweepers, etc.  
 HERCULES & LE ROI Engines  
 HOTCHKISS Steel Forms  
 INGERSOLL-RAND Compressors  
 JOHNSON Bins and Hoppers  
 ORD Concrete Road Surfaces  
 McKERNAN-TEURY File  
 HAMMERS  
 P. & H. Shovels and Cranes  
 WILLIAMS Buckets  
 REX Concrete Mixers, Pavers  
 HAISS Truck Loaders  
 Member: Associated Equipment Distributors

**R. S. ARMSTRONG & BRO. CO.**  
 676 Marietta St., Atlanta, Ga.  
**NEW EQUIPMENT IN STOCK**

BEEBE BROTHERS—Cranes  
 BUTLER BIN CO.—Bins  
 BYERS—Shovels, Cranes, & Ditchers  
 CARBIC—Lights  
 CHICAGO—Air Compressors and Drills  
 CRESCENT—Saw Tables  
 CONTINENTAL—Motors  
 DOMESTIC—Pumps  
 EDWARDS—Pumps  
 EMERSON—Pumps  
 FOOTE—Paving Mixers  
 GENERAL ELECTRIC—Motors  
 HERCULES—Engines  
 JAEGER—Concrete Mixers  
 LE ROI—Engines  
 LIGDERWOOD—Hoists  
 LOOKOUT—Boilers  
 PARKS—Saw Tables and Woodworkers  
 SASGEN—Derrick and Cranes  
 STUBBENER—Buckets  
 STROUDSBURG—Hoists  
 WATROLOO—Bar Benders  
 WORTHINGTON—Pumps  
 Members: Associated Equipment Distributors

**A. B. MOORE, JR.**

Arcade Bldg. Savannah, Ga.

*REPRESENTING*

Lakewood Engineering Company  
 Heltzel Steel Form & Iron Co.  
 Easton Car & Construction Co.  
 Barber-Greene Company  
 Northwest Engineering Co.  
 Buffalo Springfield Roller Co.  
 Domestic Engine & Pump Co.  
 Sterling Wheelbarrows  
 Wyoming Shovels  
 Automatic Signal & Sign Co.  
 Redflex Warning Signals Co.  
**EVERYTHING  
 IN CONTRACTORS' EQUIPMENT**

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## ILLINOIS

**DEALERS EQUIPMENT COMPANY**

3673 So. Michigan Ave. Chicago, Ill.

*Representing*

ALLISON-WILLIAMETTE Hoists  
 MIAMI Fordson Scraper  
 NORTH Hydraulic Digger  
 UNIVERSAL Power Shovel  
 SCHRAMM Air Compressors  
 Grading Machinery  
 Excavating Machinery

**"Everything for the Fordson"****ENGINEERING PRODUCTS COMPANY**

Arthur Prausnitz, Pres. Carl J. Gregersen, Secy.

Peoples Gas Bldg., Chicago, Ill.

**RAILS — FROGS — SWITCHES****TRACK — MATERIALS****RAIL BENDERS,, etc.****REPRESENTING**

EASTON Car & Construction Co.  
 Industrial — Quarry and Contractor's CARS.

Mid-West Locomotive Works  
 Gasoline Locomotives

**L. Z. HOWELL**

755 Old Colony Bldg. Chicago, Ill.

Phone: Harrison 3401-5127

*Representing***LINK-BELT COMPANY**

Crawler Type Shovels, Draglines, Clamshells,  
 Trench Hoos  $\frac{3}{4}$  to  $1\frac{1}{4}$  Cubic Yards  
 Portable Conveyors and Crawler Loaders

**ELECTRIC WHEEL COMPANY****"ALLWORK"**

Five- and Ten-Ton Tractors

**R. H. HYLAND CO.**

221-225 W. Huron St., Chicago, Ill.

*Exclusive Representative*

Smith Concrete Mixers and Pavers  
 McKiernan-Terry Pile Hammers  
 Insley Steel Towers and Chutes  
 Norton Ball Bearing Jacks  
 Wyoming "Red Edge" Shovels  
 Williams Clam Shell Buckets  
 Clyde Hoisting Engines  
 Barnes Pumping Outfits  
 Ingersoll-Rand Air Compressors  
 M & M Form Clamps  
 Essick Plaster Mixers  
 Jones Superior Saw Rigs  
 Atlas Adjustable Shores

Member Associated Equipment Distributors

## ILLINOIS

**W. B. LOUER COMPANY***Construction Equipment*

1512 S. Michigan Ave. Chicago, Ill.

**"CATERPILLAR" Tractors.**LAPLANT-CHOATE Dump Wagons, Scrapers,  
Bulldozers, Snow Plows, etc.**WAUSAU Snow Plows.****KILLEFER Road Tools.****SHAW Land Levelers.****D-A Lubricants.**

High Pressure Pumping Equipment.

Phones: Michigan 1130-1131 Send for Catalogue

Member: Associated Equipment Distributors

**Lowe-Peters Equipment Co.**

612 No. Michigan Ave. Chicago, Ill.

*Representing***MULTI-FOOTE—Pavers****HAISS—Truck Loaders and Clamm Shell Buckets****BAY CITY—Convertible Excavators, Tractor****Cranes and Dredges****WEBBER—Trailers****SEAVEENS—Road Paver Bins and Measuring****Hoppers****HUMPHRIES—Force and Diaphragm Pumps****FLORY—Hoists****NORTHERN—Conveyors and Bag Cleaners****AMERICAN—Slack Line and Drag Scrapers****SUPERIOR SUPPLY COMPANY**

1836-60 South Kostner Avenue, Chicago, Ill.

**DISTRIBUTORS**

New Engine Company

Metal Form Corporation

Chain Belt Company

Freeman Manufacturing Co.

Butler Sin Company

Milwaukee Locomotive Mfg.

The Huber Mfg. Co.

Company

Sullivan Machinery Co.

"Seal Tight" Expansion Joints

Lakewood Engineering Co.

A Complete Line of Construction Tools  
and Equipment Carried in Chicago.

TELEPHONE: CRAWFORD 6200

**WESTERN CONTRACTORS SUPPLY CO.***Complete Equipment and Supplies*

14 No. Clinton St., Chicago, Ill.

*Representing***DOMESTIC ENGINE & PUMP CO.—Pumps**  
Hoist, Air Compressors, Engines**KNICKERBOCKER CO.—Concrete, Plaster**  
and Mortar Mixers, Saw Rigs**WIAED FLOW CO.—Contractors' Plows****HAGGARD & MARCUSSON CO.—Camp Bunks,**  
Cots and Supplies

Members: Associated Equipment Distributors

## INDIANA—IOWA

**JOHNS EQUIPMENT COMPANY**

905 First National Bank Building  
FORT WAYNE, INDIANA

**NORTHERN INDIANA DISTRIBUTORS**

**MASSILON POWER SHOVEL COMPANY**  
Shovels, Cranes and Draglines

**HYERS MACHINE COMPANY**  
"Best Cat" Cranes and Shovels

**CHICAGO AUTOMATIC CONVEYOR COMPANY**  
Material and Coal Conveyors

**MIXERS                      PUMPS                      HOISTS**

## IOWA—KANSAS—KY.

**GLOBE MACHINERY & SUPPLY CO.**

**Des Moines                      Iowa**

**Representing**

Chain Belt Co.	Gould Pumps, Inc.
G. H. Williams Co.	Phillip Carey Co.
Butler Bin Co.	Byron-Jackson Co.
Archer Iron Works	Keystone Driller Co.
Sterling Wheelbarrow Co.	Le Roi Co.
Freeman Mfg. Co.	Waukesha Motor Co.
Wyoming Shovel Works	Erie Steam Shovel Co.
Hetsel Steel Form & Iron Co.	Syntron Co.
Neve Engine Co.	Northern Conveyor & Mfg. Co.
Sullivan Machinery Co.	George Haiss Mfg. Co.
Electric Wheel Co.	Ree Corporation

Member: Associated Equipment Distributors

**Knox Engineering and Equipment Co.**

**Road Building Machinery and Contractors' Supplies, Car Loaders and Unloaders, Cranes, Hoists and Boilers.**

32 No. Senate Avenue, Indianapolis, Ind.

**Representing**

Smith Engineering Works  
Bay City Dredge Works  
Jeffrey Mfg. Co.  
Union Iron Wks.  
Orr & Sumbower, Inc.  
Koppel Car Works  
Advance Foundry Co.  
Deuster Concentrator Co.  
Abram "Blue Ribbon" Block Machines

**POWER EQUIPMENT COMPANY**

1723-25 GRAND AVENUE, DES MOINES, IOWA

**REPRESENTING:**

Schramm, Inc., Compressors	Trasken Co., Crawlers
Rockwell Sales & Mfg. Co.,	Excav Machinery & Mfg. Co.
Rockwell Asks	Hoists
Lemmon Loader Co., Lemmon	Winnette Iron & Steel Co.
Loaders	Hoists
Hughes-Keehan Co., Dump	Wehr Co., Graders, Rollers
Bodies, Iron Mules	The Perry Co., Frisco Scrapers
Anthony Co., Dump Bodies	Miami Trailer Scraper Co.,
Whitehead & Kates Co., Cranes,	Wheel Scrapers
Rubber Tractor Wheels,	The Trainsville Co., Tractor
Street Flushers	Trailers
Bells City Mfg. Co., Crawlers	O. B. Wise Pulverizer Co.,
Universal Power Shovel Co.,	Crushers, Pulverizers
Shovels, Chalmers	Brookville Truck & Tractor Co.,
	Locomotives

**PERRY & WILSON EQUIPMENT CO., Inc.**

345 E. South St. Indianapolis, Ind.

**Representing**

Caterpillar Tractor Co.—"Caterpillar" Tractors  
Geo. Haiss Mfg. Co.—Gravel Loaders  
Killefer Mfg. Co.—Road Tools  
LaPlant-Choate Mfg. Co.—Wagons and Bull Dozers  
Hi-Way Service Corp.—Snow Plows  
D. A. Lubricant Co.—Tractor Lubricants  
Baker Mfg. Co.—Maney Scrapers  
Bax-Watson Corp.—Tractor Wagons  
Wind Plow Co.—Tractor Plows

**H. W. CARDWELL COMPANY, Inc.**

300 S. Wichita Street Wichita, Kansas

**Representing**

Caterpillar Tractor Company  
La Plant-Choate Mfg. Company  
Baker Manufacturing Company

**GIERKE-ROBINSON COMPANY**

**Distributors of Contractors' Equipment**

Suite 308, Kahl Bldg.,

**DAVENPORT, IOWA**

SMITH—Concrete Mixers and Pavers.  
AUSTIN—Trimming Machines, Back-Sifters.  
BLAW-KNOX—Steel Road Curb Cutter Form, Steel Storage Bins, Bunkers, Chain Shell Buckets, Truck Turntables.  
CLYDE—Gasoline Builders Hoists, Steam Hoists, Derrick.  
BARNES—Triplic and Quadruplex Road Builders Pumps.  
ORD—Concrete Road Surfers.  
Wheelbarrows, Sips, Wheel Scrapers, Freeman, Gas and Steam Rollers, Hook Crushers, Graders, Wire Rope, Hoes, NORTH-WEST Cranes, Power Shovels and Draglines, SULLIVAN Air Compressors, Air Tools, etc.

Members of Associated Equipment Distributors

**THOMAS L. BARRET**

**Contractors' Equipment**

**LOUISVILLE, KY.**

REX Mixers and Pavers.  
KENNEDY Gearless Crushers.  
WILLIAMS Chain Shell Buckets.  
ARMSTRONG Blast Hole Drills.  
HAISS Material Handling Equipment and Loaders.  
MUNDY Hoisting Equipment.  
RUSSELL Road Equipment.  
UNION Hammers and Concrete Buckets.  
TRIANGLE and Welded Mesh.  
CORRUGATED Bars.  
BARRET Asphalt Expansion Joint.  
VULCAN IRON WORKS, Steam & Gas Locomotives.  
JOHNSON Bins and Measuring Hoppers.  
HUG Trucks, Turntables and Subgraders.  
METAFORM Road Rail, Etc.



## KENTUCKY—LOUISIANA

## LOUISIANA

**Brandels Machinery & Supply Co.**

325 W. Main St., Louisville, Ky.

## Representing:

J. D. Adams & Co.  
Barber-Greene Co.  
Beach Manufacturing Co.  
Blaw-Knox Co.  
Buffalo-Springfield Roller Co.  
A. S. Cameron Steam Pump Works.  
Climax Engineering Co.  
Domestic Engine & Pump Co.  
Erie Steam Shovel Co.  
A. S. Farquhar Co.  
A. W. French & Co.  
Fate-Ross-Heath Co.  
Cyclone Fence Co.  
Wood Shovel & Tool Co.

Ingersoll-Rand Co.  
Inley Mfg. Co.  
Lafayette Co.  
A. Leach & Sons Rope Co.  
McKernan-Terry Drill Co.  
Haugen Derrick Co.  
Hawman Bros.  
T. L. Smith Co.  
Smith Engineering Works  
Sterling Wheelbarrow Co.  
Clyde Iron Works  
Ren-Watson Corp.  
Western Wheeled Scraper Co.  
Wernberg Mfg. Co.  
Littleford Bros.

Member: Associated Equipment Distributors

**LOUISIANA ROAD MACHINERY COMPANY**

1111 Julia Street

NEW ORLEANS

LOUISIANA

## Representing:

Jaeger Machine Co.—Concrete Mixers and Pavers.  
Speeder Mach. Corp.—Auto-Cranes and Draglines.  
Elgin Corp.—Street Sweepers and Educators.  
Eagle Dump Wagons.  
Russell Grader Manufacturing Company.  
Buffalo-Springfield Roller Company.  
Cyclone Fence Co.  
Universal Rock Crusher Company.  
Lyle Culvert & Road Equip. Co.

**ROY C. WHAYNE SUPPLY CO.**

Opposite City Hall—608 W. Jefferson St.

LOUISVILLE, KY.

"CATHERPILLAR" Tractors  
KOEHRING Shovels, Cranes, Pavers  
JAEGER Concrete Mixers  
HELTEL Steel Forms  
BYERS "Bear Cat" Excavator  
BARNES Pumps  
SULLIVAN Compressors, Drills, etc.  
FLOEY Hoists, Cableways, etc.

CONSTRUCTION EQUIPMENT OF ALL KINDS

Member: Associated Equipment Distributors

**OLE K. OLSEN**

325 N. Cortez St.

New Orleans

## REPRESENTING:

Ransome Con. Mach. Co.  
McKernan-Terry Drill Co.  
Amer. Cement Mach. Co.  
Amer. Saw Mill Mach. Co.  
Mundy Hoisting Engine Company  
Northwestern Expanded Metal Co.  
Concrete Steel Co.  
Schramm, Inc.  
Truscon Laboratories  
Dehstrom Metallic Door Co.  
Ralph B. Carter Co.

Atlanta & Atlantic Terra Cotta Co.  
Wyoming Shovel Works  
Blaw-Knox Co.  
Patent Scaffolding Co.  
Universal Form Clamp Co.  
Atlas Engineering Co.  
Blystone Mfg. Co.  
Lafayette Co.  
Cleveland Wheelbarrow Co.  
H. W. Ross Co.  
Amer. Steel & Wire Co.

Member: Associated Equipment Distributors

**The CLYDE COMPANY, Inc.**

309 MAGAZINE ST.

NEW ORLEANS, LA.

Beach Saw Rigs.  
Clyde Hoisting Engines and Equipment.  
Lakewood Concrete Mixers.  
Northwest Crawler Cranes, Shovels, etc.  
Ohio Locomotive Crane.  
Seawman Cableway Extruding Machinery.  
Starting Wheelbarrows.  
Harnes Power Pumps.  
Atlas Mortar Mixers.

Wood Molybdenum Shovels.  
Universal Truck Cranes.  
Wander Concrete Mixers.  
Atlas Adjustable Shores.  
Erie Steel Bins, Aggregators.  
M. & M. Form and Column Clamps.  
Freeman Turntables.  
Barber-Greene Conveyors.  
London, Ditchers.  
Sullivan Air Compressors.  
Toledo Turches.

Member: Associated Equipment Distributors

**C. T. PATTERSON COMPANY, Inc.**

800 So. Peter Street,

New Orleans, La.

## Representing

BAY CITY DREDGE WORKS  
GEO. HAISS MFG. CO.  
RUMSEY PUMP CO.  
LA PLANT-CHOATE MFG. CO.  
COLUMBIAN ROPE CO.  
HAUCK MFG. CO.  
DAYTON SURE GRIP & SHORE CO.  
EASTON CAR & EQUIPMENT CO.  
CLEVELAND BLOCK CO.  
CLEVELAND ROCK DRILL CO.  
AMERICAN STEEL & WIRE CO.  
REX Mixers and Pavers

C. H. & E. Saw Rigs, Hoists  
Pumps, Material Elevators  
STOCKLAND Graders  
Dirt Handling Tools  
FAIRBANKS Wheelbarrows  
LE ROI Engines  
WRIGHT Hoists  
SIMPLEX Jacks  
CLEVELAND Tractors  
HANDY Back Balers

Reinforcing Steel—Our Specialty

**A. M. Lockett & Co., Ltd.**

Queen &amp; Crescent Bldg., New Orleans, La.

## Representing

Worthington Pump & Machy. Corp.  
Construction Specialties Co.  
Universal Road Machine Co.  
Harnischfeger Corporation  
Williamsport Wire Rope Co.  
Robins Conveying Belt Co.  
O. K. Clutch & Machine Co.  
O. S. Johnson Company  
T. L. Smith Company  
Huber Mfg. Co.

**Southern States Equipment Co., Inc.**

801 New Orleans Bank Bldg.

NEW ORLEANS

"Ord" Concrete Finishing Machines  
"P&H" Shovels and Cranes  
"Parsons" Trench Excavators and Backfillers  
"Telamith" Sand and Gravel Plants  
"Williams" Clam Shell Buckets  
"Hotchkiss" Steel Road Forms  
"Orr & Sombower" Hoisting Engines, Boilers and Concrete Mixers  
"Hug" Trucks and Turntables  
"Foote" Paving Mixers  
"Standard" Heating Kettles  
"Archer" Concrete Cutting  
"Domestic" Pumps and Engines  
"Union" Pile Hammers  
"Koppel" Industrial Cars and Track  
"Handy-Andy" Pulling Jacks  
"Butler" Steel Bins and Measuring Hoppers



## LA.—MARYLAND

**Woodward, Wight & Co.**

NEW ORLEANS

LOUISIANA

## Representing

Trucon Steel Company  
The Trucon Laboratories  
Solvay Sales Corporation  
Josam Mfg. Company  
Burt Mfg. Company  
Lidgerwood Mfg. Company  
The Osgood Company  
American-Terry Derrick Co.  
The Hayward Company  
Page Engineering Company  
Vulcan Iron Works  
Marsh-Capron Company  
Austin-Western Road

Western Wheel Scraper Co.  
Rex-Watson Corporation  
Wyoming Shovel Company  
Hercules Powder Company  
Atlas Powder Company  
John A. Roebling's Sons Co.  
Plymouth Cordage Company  
Climax Engineering Co.  
Chicago Pneumatic Tool Co.  
Pulsometer Steam Pump Co.  
American Steam Pump Co.  
Humphreys Mfg. Company  
Machinery Company

**WORMINGTON & POWERS, Inc.**  
337 Howard Avenue, New Orleans, La.

## Representing

LITTLEFORD BROS. CO.—  
Tar & Asphalt Heaters,  
Road Builders' Supplies.  
THE KNICKERBOCKER  
CO.—Concrete & Mortar  
Mixers, Saw Rigs.  
INSLEY MFG. CO.—Excavators,  
Concrete Placing  
Equipment, Steel Derricks.  
SASGEN DERRICK CO.—  
Derricks for all Purposes.  
YEOMANS BROTHERS CO.  
—Municipal Sewage Pumping  
Apparatus.

MEAD-MORRISON MFG  
CO.—Steam, Gas & Electric  
Hoists & Car Pullers,  
Full Swing Caterpillar  
Cranes.  
MUNDIE MFG. CO.—Gas &  
Electric Air Compressors.  
METAL FORMS CORP.—  
Building, Gutter, Curb,  
Sewer & Road Forms.  
ECONOMY ENGINEERING  
CO.—Portable Hoists.  
A. S. MARLOW—"Mario"  
Mud-Hog Pumps.

**Shreveport Machinery Sales Co.**Contractors' Equipment — Saw Mill Machinery  
927 Giddens-Lane Building Shreveport, La.

## REPRESENTING:

Barber-Greene Co., Ditchers, Loaders, Conveyors  
Thaw Shovels, Cranes and Draglines  
Orr and Sembower, Hoists, Steam, Electric, Gasoline, Concrete Mixers, Engines and Boilers  
Barnes Mfg. Co., Power Pumps for all purposes  
Vogt Bros. Mfg. Co., Steam Pumps, Fire Pumps  
Fuller & Johnson Mfg. Co., Farm Engines, Electric Light Plants, Pumping Outfits, Fire Pumping Units  
Telamith, Gravel and Quarry Plants  
Schramm, Inc., Air Compressors

**ALBAN TRACTOR COMPANY, Inc.**

1019 No. Eutaw St. Baltimore, Md.

## Representing

Caterpillar Tractor Company  
Athey Truss Wheel Company  
Fox Rotary Snow Broom Company  
General Excavator Company  
Killefer Manufacturing Company  
LaPlant-Choate Mfg. Company  
Rex-Watson Corporation  
Rotary Snow Plow Company  
Stockland Road Machinery Company  
Union Iron Works  
Williamette Iron & Steel Works  
Butler Manufacturing Company  
Frick Snow Plow Company  
D-A Lubricant Company  
Highway Trailer Company

## MD.—MASSACHUSETTS

**THOS. M. BROWN**

106 So. Gay St.

Baltimore, Md.

## REPRESENTING

Koehring Company  
Concrete pavers, mixers, cranes and shovels.  
Heltzel Steel Form & Iron Company  
Road forms, aggregate batchers  
J. D. Adams & Company  
Leaning Wheel Graders.  
Keystone Driller Company  
Shovels.  
Huber Manufacturing Company  
Gasoline rollers.

**JOHN C. LOUIS**

221 S. Eutaw St. Baltimore, Md.

## REPRESENTING

Jaeger Machine Co.  
Barnes Manufacturing Co.  
Ideal Concrete Machinery Co.  
National Hoisting Engine Co.  
Northern Conveyor & Mfg. Co.  
American Cable Co.  
Cyclone Fence Co.  
Wheeling Corrugating Co.  
Good Roads Machinery Co.  
Littleford Brothers  
Hotchkiss Steel Products Co.  
Jones Superior Machine Co.  
The Foote Co.

MEMBER: Associated Equipment Distributors

**MARYLAND TRUCK EQUIP. CORP.**

Centre &amp; Holliday Sts. Baltimore, Md.

## Representing

DIFFERENTIAL STEEL CAR CO. 3-Way Dump Bodies  
GALION ALLSTEEL BODY CO. Hand Hoists and Bodies  
THE HEIL CO. Hydraulic Hoists & Bodies  
GENERAL WOODWORK CO. Truck Cabs  
THE R. B. COMPANY Roller Bolsters  
FITZ GIBBON & CRISP, Inc. High-Lift Coal Bodies  
SILENT HOIST, WINCH & CRANE CO. Cranes & Derricks  
UTILITY TRAILER MFG. CO. 6-Wheel Attachments  
SNYDER BODY COMPANY "Snyder" Sliders  
H. H. BABCOCK EQUIPMENT CO. Light Delivery Bodies  
ARCADIA TRUCK BODY CORP. Heavy Duty Bodies  
THE RED BALL MOTOR TRUCK CORP. Van Bodies

**THE HENRY H. MEYER CO.**110 S. Howard St. Baltimore, Md.  
1114 9th Street, N. W. Washington, D. C.

## REPRESENTING

Austin Western Rd. Mach. Co. The Harrington Co  
Link-Belt Company Union Iron Works  
Blaw-Knox Co. A. Leach & Sons Rope Co.  
Boston & Lockport Block Co. Lidgerwood Mfg. Co.  
C. H. & E. Manufacturing Co. Byers Machine Co.  
Chain Belt Company Parsons Co.  
Corrory & Company Pulsometer Steam Pump Co.  
E. I. de Pont de Nemours Co. Sterling Wheelbarrow Co.  
Inc. Templeton-Kenly Co.  
Duff Mfg. Co. Universal Road Machy. Co.  
Member: Associated Equipment Distributors

## MD.—MASSACHUSETTS

**THE R. D. GRIER & SONS CO.**

*Machine Shop—Iron & Brass Foundry*  
Salisbury, Del-Mar-Va Peninsula, Maryland

*Representing*

Fairbanks, Morse & Company  
Wyoming Shovel Works  
Sterling Wheelbarrow Company  
John A. Roebblings' Sons Company  
Crane Company  
National Tube Company  
International Motor Trucks  
Goodyear Tire & Rubber Company  
Manhole Frames, Covers & Drain Gates

**HEDGE & MATTHEIS CO.**

*The Equipment House for Contractors*  
Fifty Dorchester Avenue Boston, Mass.

Jaeger Machine Company  
Marsh-Capron Company  
Consolidated Concrete Machinery Co.  
Mead-Morrison Manufacturing Company  
McKiernan-Terry Drill Co.  
Lakewood Engineering Co.  
Ingersoll-Rand Co.  
A. Leschen & Sons Rope Co.  
Blystone Manufacturing Company.  
Butler Bin Co.  
Miles Manufacturing Company  
The Wood Shovel and Tool Co.  
C. H. & E. Manufacturing Co.  
Littleford Brothers  
Crowe Mfg. Corp.  
American Tubular Towers  
Member: Associated Equipment Distributors

**ABERTHAW COMPANY***EQUIPMENT DIVISION*

133 Southamptn St., Boston, Mass.

*REPRESENTING*

FLORY Hoists and Derricks  
CONTINENTAL "Red Seal" Gasoline Power Units  
LEACH Concrete Mixers and Saw Rigs  
HAISS Loaders, Conveyors, Clam Shell Buckets  
SCHRAMM Compressors  
CLYDE Steel Derricks  
AMERICAN "Tru-lay" Wire Rope  
U. S. STANDARD Concrete Block Machinery  
CARTER Open and Closed Discharge Diaphragm Pumps  
ARCHER Steel Tower Hoists and Fittings  
**EQUIPMENT FOR SALE AND RENT**

**P. I. PERKINS COMPANY**

110 High Street Boston, Mass.

*Representing*

BYERS Bear Cat Cranes  
REX Mixers and Pavers  
MUNDY Hoists  
MARLO Pumps  
BLAW-KNOX Buckets, Road Forms, Etc.  
DOBBIE Derricks and Fittings  
WALTER Snow Fighters

*Mechanical Equipment for Power Plants,  
Industrial Plants and Contractors*

**THE BOND CO.**

HAROLD L. BOND, Pres.

84 HIGH STREET, BOSTON

**Contractors' Tools and Equipment***Representing*

SMITH Mixers and Pavers  
"NORTHWEST" Cranes,  
Shovels and Drag Lines.  
"CHICAGO" Portable Con-  
veyors.  
"RED STAR" Barrows and  
Concrete Carts.  
"ESSICK" Plaster Mixers.  
"INSLEY" Excavators and  
Concrete Placing Equip.  
JONES "SUPERIOR" Wood  
workers.  
"SAGEN" Derricks.  
"NOVO" Gasoline Engines,  
Pumps and Hoists.  
"MONARCH" Block Ma-  
chines.  
"SYNTRON" Electric Ham-  
mers.  
"BLACK & DECKER" Drills

**FRANK B. PHINNEY**

148-152 Fairmount Avenue  
Hyde Park (Boston) Mass.

*Representing*

UNIVERSAL ROAD MACHY. CO.—"RELIANCE" Crushers,  
Elevators, Screens, Bins, Sand & Gravel Wash Plants  
MEAD-MORRISON MFG. CO.—Tractors, Snow Plows  
SUNBURY MFG. COMPANY—Graders, Road Drags, Scarifiers  
SHUNK MFG. COMPANY—Blades, Cutting Edges  
CONANT MACH. COMPANY—Loaders  
CONVEYOR & EQUIPMENT CO.—Belt Conveyors  
BAKER MFG. COMPANY—Rotary Scrapers  
TROY TRAILER & WAGON CO.—Trailers, Wagons  
WAUKESHA & CONTINENTAL—Motors  
Also  
Pavers, Mixers and Heating Kettles—Stack and Drag Lines—  
Spreaders and Unloaders

**C. R. DODGE COMPANY**

141 Milk St. Boston, Mass.

*Representing*

Koehring Company  
Russell Grader Mfg. Co.  
Heltzel Steel Form & Iron Co.  
National Hoisting Engine Co.  
Cement Block Machinery Co.  
Kwik-Mix Concrete Mixer Co.

**GEO. H. SAMPSON CO.***Contractors' Supplies*

80 Federal St. Boston, Mass.

Telephone, Liberty 7470

*New England Representatives for*  
**INGERSOLL-RAND COMPANY**

Air Compressors

Jackhammers, Pneumatic Tools, Pumps

**ATLAS POWDER CO.**—Dynamite

**AMERICAN**—Saw Mill Machinery

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## MASSACHUSETTS

**DYAR SALES AND MACHINERY COMPANY**

Municipal and Contractors' Equipment and Machinery  
86 BROADWAY CAMBRIDGE, MASS

## REPRESENTING

J. D. Adams & Company—Graders, Road Drags.  
American Concrete Maching Co.—Concrete Mixers, Hoists.  
Oliver Ames & Sons Co.—Shovels, Scoops.  
Asroll Burner Co.—Asphalt "Smokeless" Heaters.  
Borch Flow Works—Sprayers and Unloaders.  
Baker Mfg. Co.—Truck and Tractor Snow Plows.  
Charles Hyatt & Co., Inc.—Sweepers, Brooms, Sprinklers, Trailers.  
Asphalt Plants and Sand Spreaders.  
Jawa Mfg. Co.—One Piece Gravel Reduction Plants, Crushers.  
Kline-Lewis—Picks, Hammers, Crow Bars.  
Le Roi Company—Gasoline Engines.  
Menominee Fence Co.—Snow Fence and Posts.  
Monarch Tractor Co.—Tractors.  
Parsons Company—Excavators, Backfillers.  
Rae-Watson Corp.—Wrecks, Trailers.  
Union Iron Works—Truck and Tractor Plows.  
Western Crucible Steel Casting Co.—Shovel Teeth.

## MICHIGAN

**THE MAMER COMPANY**

Benton Harbor

Michigan

## Representing

Jaeger Machine Company

Hauck Mfg. Company

C. H. &amp; E. Mfg. Company

**BORDEN & REMINGTON COMPANY**

115 Anawan St.

Fall River, Mass.

## REPRESENTING:

Chain Belt Company—Rex Mixers and Pavers.  
Blaw-Knox Company—Forms and Batches.  
Ingersoll-Rand Co.—Compressors.  
Carbic Manufacturing Co.—Lights.  
Hauke Manufacturing Co.—Burners.  
Waukesha and LeRoi—Engines.  
Saugen—Derricks.  
Ames and Red Edge—Shovels.  
Atlas—Dynamite.  
National Hoisting Engine Company.  
Cement Block Machinery Company.  
Williamsport Wire Rope Company.

**W. H. ANDERSON TOOL AND SUPPLY CO.**

2178 Franklin St.

Detroit, Michigan

## Representing

McKiernan-Terry steam hammers  
Davenport locomotives  
Hansome mixers, pavers and chuting equipment  
Kove gasoline engines, hoists and pumping outfit  
Speeder shovels, cranes  
Connant shovels and scoops  
Sidney wheelbarrows and scrapers  
Monarch tractors  
Sargent snow plows  
Hais loaders and material handling equipment  
Johnson—bins and batch measuring hoppers  
Littleford Bros.—maintenance heaters

**M. B. TYLER COMPANY**

344 Columbus Ave. Springfield, Mass.

## Representing

CATERPILLAR TRACTOR CO.—Tractors  
(Conn. & Western Mass. Territory)  
KILLEFER MFG. CO.—Tractor Implements  
UNION IRON WORKS—Tractor and Truck  
Snow Plow Equipment  
LaPLANT-CHOATE MFG. CO.—Tractor Trailers and Snow Plow Equipment  
WILLAMETTE IRON & STEEL WORKS—  
Hoists for "Caterpillar" Tractors  
A. B. FARQUHAR CO., LTD.—Boilers, Engines  
AUSTIN-WESTERN—Road Builders' Machinery  
SPEEDER MACHY. CORP.—Gasoline Shovels

*also*  
We carry a complete line of Contractors' and  
Road Builders' Machinery

**Beattie Machinery Sales Co.**

## CONTRACTORS' EQUIPMENT

1946 Baker St.

Detroit, Mich.

## REPRESENTING

Sullivan Mach. Co.—Compressors and Air Tools  
Leach Oshkosh Co.—Concrete Mixers and Saw Rigs  
Humphreys Mfg. Co.—Diaphragm and Centrifugal  
Pumps  
Flory Mfg. Co.—Hoists  
Continental Motors Corp.—Industrial Gasoline  
Engines  
General Wheelbarrow Co.—Barrows and Concrete  
Carts, Salamanders

**NEW ENGLAND IMPLEMENT CO., Inc.**19 Jersey St.  
Boston, Mass.22 Garden St.  
Worcester, Mass.

## Representing

Anthony Company	Trackson Company
Ersted Machy. Mfg. Co.	Trailmobile Company
Miami Trailer-Sprayer Co.	Union Iron Works
Perry Company	Universal Power Shovel Co.
Saunders Bros., Inc.	Wehr Company
Schramm, Inc.	Whitehead & Kales Co.

**CONTRACTOR'S EQUIPMENT COMPANY, Inc.**

5169 Martin Ave., DETROIT, MICH.

18 Ellsworth Ave., GRAND RAPIDS, MICH.

## Representing:

CATERPILLAR Tractors.  
REX Mixers and Pavers.  
ERIE Shovels and Cranes.  
DOMESTIC Pumps and Compressors.  
ERIE Clamshell Buckets.  
SARGEN Derricks and Winches.  
HUG Road Builders' Trucks.  
WAUSAU Snow Plows.  
ORD Concrete Road Finishers  
Steam and Gas Hoists, Conveyors, Wheelbarrows,  
Shovels, etc.  
Member: Associated Equipment Distributors

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

## MICHIGAN

**J. W. DOPP & COMPANY**  
**EQUIPMENT FOR CONTRACTORS**  
**2937 East Grand Blvd. Detroit, Mich.**
*Official Distributors for*

INSLEY—Gas Shovels, Cranes & Excavators also  
 INSLEY—Steel Towers, Mast Hoists, Concrete Clauling Equipment, Derricks  
 LESCHEN—"Hercules" Red Strand Wire Rope  
 STERLING—Wheelbarrows and Carts  
 WYOMING—"Red Edge" Shovels, Scoops and Picks  
 DAYTON—"Pure Grip" Wall Ties & Spruders, Shores  
 Concrete Inserts, Sleepers and Furring Anchors  
 CROWE—Safety Saws

Slackline and Dragline Outfits

Member: Associated Equipment Distributors

## MICHIGAN

**PAYNE G. WEST**  
*Contractors' Equipment*

1448 Wabash Ave., Detroit, Mich.  
 Room 204, Phone: Cadillac 4195

*Representing*

T. L. SMITH CO.—Mixers and Pavers  
 MEAD-MORRISON MFG. CO.—Hoists, Car-Pullers, Tractors and Gas Shovels, Cranes, Draglines and Ditchers  
 SMITH ENGINEERING WORKS—Crushers, Screens, Washers, Sand Tanks, Etc.  
 STELLING WHEELBARROW CO.—Barrows and Carts

*Also*

Belt Conveyors, Storage Bins, Slack-Line and Drag-Line Equipment.

**Good Roads Supply Company**

Material for Machinery for  
 Roads and Streets

6331-51 Tireman Ave. Detroit, Michigan

American Gas Accumulator Co.  
 National Hoisting Engine Co.  
 Koshring Co.

Blaw-Knox Co.

Acme Road Machinery Co.

C. H. &amp; E. Mfg. Co.

Automatic Sign &amp; Signal Co.

Barber-Greene Co.

Archer Iron Works

Universal Crane Co.

Rommel Mfg. Co.

**WETTLAUER BROS.**

Glendale 5485 2026 Michigan Avenue.  
 DETROIT, MICH.

*Michigan Distributors for*

AMERICAN CEMENT MACHINE CO.,  
 BOSS MIXER, any size

CONSTRUCTION MACHINERY COMPANY  
 WONDER MIXERS, HOISTS AND PUMPS

ORR & SEMBOWER  
 HOIST, GASOLINE, STEAM OR ELECTRIC  
 EVINRUDE CENTRIFUGAL PUMPS  
 BLOCK MACHINE EQUIPMENT

**O'NEAL TOOL AND SUPPLY CO.**

5327 Livernois Ave. Detroit, Mich.

*Representing*

BLYSTONE MFG. CO.—Plaster and Mortar  
 Mixers

CHASE FDY &amp; MFG CO.—Industrial Cars

GENERAL WHEELBARROW CO.—"Akron"  
 Wheelbarrows, Concrete Carts, Mortar Boxes,  
 Salamanders, Scrapers, Coal Chutes

STEEL SCAFFOLDING CO.—Adjustable Steel  
 Trestles, Carpenters' Brackets, Ladder Jacks,  
 Mortar Board Stands, etc.

*Also*

Equipment for Concrete Products Plants, Concrete Mixers, Pumps, Engines, Saw Rigs, Gas and Electric Hoists, Shovels, Air Compressors, Etc.

**WOLVERINE CONCRETE MACHINERY CO.**

2421 Buchanan St., Detroit, Michigan

*Representing*

LEACH-OSHKOSH.....Mixers and Pavers  
 HUMPHREYS.....Pumps  
 MASTER TROWEL.....Long-handled Finishers  
 BROWN CLUTCH CO.....Hoists  
 VERGAN-SCHMIDT Excavators & Tractocranes  
 BLYSTONE.....Plaster Mixers  
 MILES.....Cement Block Machinery  
 KENT.....Continuous Mixers  
 ROCKTILE.....Automatic Strippers

CONSTRUCTION EQUIPMENT  
 CEMENT PRODUCTS MACHINERY

**WALLACE EQUIPMENT COMPANY**

Phone: 2393

1024 Dime Bank Bldg. Detroit, Mich.

*Agents for:*

ROOS—Shores

SYMONS—Clamps

UNIVERSAL—Clamps

PATENT—Scaffolds

PLYMOUTH—Locomotives

HELTZEL—Steel Forms

**HUNTER MACHINERY COMPANY**

GRAND RAPIDS, MICH

Office, Shop and Warehouse in our new building  
 at 530-532 Monroe Avenue, N. W.

Phone 8-4111

CHAIN BELT—Mixers, Pavers

BLAW-KNOX—Buckets, Bins,

Batchers, Road Forms

NORTHWEST—Cranes, Drag-

lines, Shovels

LESCHEN—Wire Rope, Blocks

LE ROI—Engines

SASGEN—Derricks

CARBIC—Lights

LONDELIN—Hesters

CLEVELAND—Wheelbarrows

AMERICAN Tubular Elevator

Cranes

ORO—Finishing Machines

Member: Associated Equipment Distributors

SAUERMAN—Draglines

SULLIVAN—Air Compressors

and Tools

ATLAS ENGR. CO.—Mortar

and Plaster Mixers

BARNES MFG. CO.—All types

of Pumps

CLYDE—Gas, Steam and Elec-

tric Hoists

PARSONS—Trenchers and

Backfillers

AEROL—Trench Hesters,

Burners

CONNEAUT—Hand Shovels

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## MICHIGAN

**KELLOGG-BURLINGAME CO.**

67 Market Ave. N. W. Grand Rapids, Mich.

*Representing*

Knickerbocker Concrete and Mortar Mixers  
 Nove Gasoline Engines, Hoists, Pumping Outfits  
 M & M Form Clamp Co.  
 Bay City Cranes  
 Huber Motor Road Rollers and Maintainers  
 Butler Bin Co.  
 Myers Bulldozer Pumps  
 Centrifugal Pumps, Diaphragm Pumps  
 Freeman Truck Turntables  
 Scrapers, Wheelbarrows, Etc.  
 Atlas Adjustable Shores  
 Archer-Iron Wks.—Towers & Spouting Equipment  
 Heister Locomotives

Member: Associated Equipment Distributors

**F. D. LAKE COMPANY**Contractors' Machinery and Tools  
16 Campau Ave. N. W. near Fulton

GRAND RAPIDS, MICHIGAN

*Representing*

T. L. Smith Co.—Concrete Mixers and Pavers  
 C. H. & E. Mfg. Co.—Portable Saw Rigs and  
 Pumps  
 Smith Engineering Works—Gravel Washing and  
 Rock Crushing Machinery  
 Northern Conveyor Mfg. Co.—Portable Conveyors  
 Geo. Hains Mfg. Co.—Creeper Loading Equipment  
 A. Leschen & Sons—Wire and Manila Rope  
 Wood Shovel & Tool Co.—Mo-lyb-den-um Shovels.  
 Keystone Driller Co.—Drills and Excavators  
 Mead-Morrison Mfg. Co.—Hoisting Machinery  
 Rome Mfg. Co.—Rome Graders

**UPPER PENINSULA TRACTOR CO.**

L'Anse

Michigan

*Representing*

CATERPILLAR Tractors  
 ROTARY Snow Plows  
 WAUSAU Snow Plows  
 OSGOOD Steam Shovels  
 KILLIFER Road Machinery

**Michigan Highway Equipment Co.**

217 E. Shiawassee St. Lansing, Mich.

*Representing*

RUSSELL GRADER MFG. CO.—Road Machinery  
 and Gravel Equipment  
 UNIVERSAL CRUSHER CO.—Steel Crushers  
 REPUBLIC IRON WORKS—Concrete Mixers  
 HETHERINGTON & BERNER—Sand and Gravel  
 Pumps  
 EAGLE IRON WORKS—Sand and Gravel  
 Washers  
 CYCLONE FENCE CO.—Snow Fence  
 CANTON CULVERT & SILO CO.—Corrugated  
 Culverts  
 RELIANCE ENGINEERING CO.—Guard Rail  
 ARTHUR DOVE CO.—Maintenance Paints

## MICH.—MINNESOTA

**MICHIGAN EQUIPMENT COMPANY**

Pontiac

Michigan

*Representing*

Wehr Company  
 Trackson Company  
 Miami Trailer-Scraper Company  
 Euclid Crane & Hoist Company  
 Ersted Machy. & Mfg. Company  
 Electric Wheel Company  
 Marion Steel Body Company  
 Sauerman Bros., Inc.

**H. E. ERICKSON CO., Inc.**

114 South Third St., Minneapolis, Minn.

**CONTRACTORS' EQUIPMENT  
AND SUPPLIES**

Best Concrete Mixers	Dragline Buckets
Stewart Conc. & Plaster	Puffer & Hubbard Wheelbarrows
Mixers	Duff Trench Braces
Sackett Spouting	Cement Tools of all kinds
Saugen Derricks	Cement Sack Balers
Column Clamps	Cement Sack Cleaners
Elite Scaffold Brackets	Steel Dump Bodies
Nove Engines	Form Clamps
Nove Hoists	Tie and Form Wire
Nove Pumps	Saw Rigs

**W. H. HALE & Co.**

2529 University Ave., S.E., Minneapolis, Minn.

*REPRESENTING*

"WONDER"—Mixers, Hoists,	"PAGE"—Drag 3t chst
"RANSOME"—Mixers, Pav-	"DAVENPORT"—Locomotives
ing, Mast Plants	"BEACH"—Saw Pigs
"CLYDE"—Steam Gasoline,	"SKELTON"—Bantam Shovels
Electric Hoists and Derricks	"PUFFER-HUBBARD"—
"P. & H."—Gasoline Shovels,	Wheelbarrows
Cranes, Backfillers, etc.	"HAUCK"—Concrete Haulers
"ERIC"—Climoshel Buckets,	"HANDY"—Sack Cleaners,
Aggregators, Bins	Balers
"ALDRICH"—High Pressure	"SAGEN"—Derricks, Winches
Road Pumps	"PAPKE"—Block Machines
"HAWLEY"—Tie Bolts	and Tampers

MEMBER: Associated Equipment Distributors

**MINNEAPOLIS EQUIPMENT  
COMPANY**

520 Second Street, S. E. Minneapolis, Minn.

Northwest Distributors for	
Archer Tower Outfits	Kardong Column Clamp
and Chuting	J. S. Mundy Steam,
Baldwin Shovels and	Gas and Elec. Hoists
Scoops	Multi-Foots Pavers
Byers Bear Cat Cranes	and Trailers
and Truckcranes	Nelson Farm Tie and
Humphreys High	Spacers
Capacity Pumping	Pioneer Buckets and
Outfits	Cabinets
Hotchkiss Steel Forms	Red Star Carts and
Ideal Concrete Prod.	Wheelbarrows
Jaeger Concrete Mix-	Williamsport Wire Rope
ers and Placing	Baker Car. Unloaders
Plants	and Backfillers
Link-Belt Locomotive	Seavern's Road and
and Crawler Cranes	Material Bins
Loaders and Conveyors	

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.



## MINNESOTA

## MINN.—MISS.—MO.

**Minnesota Equipment Co.**

419 South Sixth Street

**Minneapolis, Minn.***Northwest Distributors for***LAKEWOOD** Mixers, Spouting, Carts, Tampers,

Screens, Subgraders, Cars, Track

**LIDGEWOOD** Steam, Gasoline and Electric

Hoists

**THEW** Steam, Gasoline Shovels and Cranes**MILWAUKEE** Gasoline Locomotives**BAKER-MANEY** Four-Wheel Self-Loading

Scrapers

**SCHRAMM** Air Compressors**CLYTRAC** Crawler Tractors**KWIK-MIX** Small Tilting Concrete Mixers**MOTOR POWER EQUIPMENT CO.**

Ford Rd. and River Blvd., St. Paul, Minn.

*Representing*

Wehr Co.

Ersted Machy. Mfg. Co.

Williamette Iron Works

Whitehead &amp; Kales Co.

Trackson Co.

Belle City Mfg. Co.

Oklahoma Engr. &amp; Fdry. Co.

Union Iron Works

Universal Power Shovel Co.

**THORMAN W. RSHOLT COMPANY**

300 Tenth Ave., South

Minneapolis, Minn.

*Representing*

Kochring Co.—Pavers, Mixers, Cranes

C. H. &amp; E. Mfg. Co.—Saw Rigs, Hoists, Pumps

Metal Forms Corp.—Steel Forms

Blystone Mfg. Co.—Mortar Mixers

Emerson Mfg. Co.—Steam Pumps

C. S. Johnson Co.—Demountable Bins

W. A. Riddell Co.—H. P. One-Man Power Graders

The Trailmobile Co.—Semi- and 4-wheel Trailers

Vulcan Iron Works—Steam and Gas Locomotives

Hend-Morrison Co.—Hoists, Shovels, Cranes and Tractors

M. &amp; M. Form Clamp Co.—Column Clamps

LaPlant Choate Co.—Trailers, Snow Plows

*Everything for the Contractor***RAYMER HARDWARE CO.**

56-60 E. Fifth St.

St. Paul, Minn.

*Representing*

Kwik-Mix Concrete Mixer Co.—Concrete Mixers

Cleveland Wheelbarrow Co.—"Red Star" Barrows and Carts

American Hoist &amp; Derrick Co.—"Crosby" Wire Rope Clips

Steel Scaffolding Co.—Scaffold Brackets

Bates Valve Bag Co.—Wire Ties

Paris Ball Bearing Machine Co.—Saw Rigs

Wood Shovel &amp; Tool Co.—Shovels and Scoops

Construction Machinery Co.—Hoists

Sagen Derrick Co.—Derricks and Winches

Le Roi Engine Co.—Engines

M &amp; M Wire Clamp Co.—"M &amp; M" Form Clamps

*Equipment and Supplies of All Kinds***WM. H. ZIEGLER CO., Inc.***Contractors' Equipment*

Minneapolis, Duluth, &amp; St. Paul, Minn.

Ord Concrete Road Finishers

Box Mixers and Pavers

Insley Towers and Chuting

Barnes Pumps

Plymouth Gasoline Locomotives

Western Cars and Grading Equipment

Williams Clamshell Buckets

Sterling Wheelbarrows and Carts

Wyoming Red Edge Shovels

Caterpillar Tractors

Brie Steam and Gas Shovel &amp; Cranes

Littleford Bros., Tar Heaters, Kettles, etc.

Butler Bin and Measuring Hoppers

Barber-Greene Co., Conveyors and Loaders

Climax Trustworthy Engines

*Member: Associated Equipment Distributors.***CLIFFORD WATERHOUSE***Road Building Equipment*

West Jackson, Miss.

*Representing*

Russell Grader Mfg. Co.

Olise Culvert &amp; Metal Co.

A. Leachman &amp; Sons Wire

Rope Co.

Wyoming Shovel Works

E. I. DuPont DeNemours &amp;

Co., Inc. (Explosives)

Construction Machinery Co.

Evinrude Motor Co.

Nelson Bros., Inc.

ALSO

Road Rollers, Road Graders and Concrete Mixers

Bought—Sold—Rented

*"Complete Warehouse stocks carried in Jackson"***BORCHERT-INGERSOLL, Inc.**

ST. PAUL, MINN.

DISTRIBUTORS

DULUTH, MINN.

"Van Dorn" El. drills, girders

"Smith" Mixers and Pavers

"Blaw-Knox" Con. forms, clam-

shell buckets &amp; "Batcher plants

"Northwest" Shovels &amp; Cranes

"Sanderson-Cyclone" Drills

"Sullivan" Compressors, drills

"Domestic" Pumps and hoists

"Telamith" Crushers, screen and

conveying machinery

"Northern" Conveyors

"Sauerman" Cableway excava-

tors and power drag scrapers

"Monarch" Crawler Tractors

"Snow King" Rotary plows

"Parsons" Excavators, back-

fillers

"Universal" Truck cranes

"Carbie" Lights

"Whitcomb" Gasoline and

electric locomotives

"BB" All steel hand hoists

"Koppel" Industrial cars, etc.

"Hales" Loaders, belt con-

veyors

"McKiernan-Terry" Pileham-

mers and jacks

"Crows" Safety saws

"Nye" Steam pumps

*Member: Associated Equipment Distributors***E. A. MARTIN MACHINERY CO.**

501-521 School St.

Joplin, Mo.

*We Stock and Sell***WONDER** Concrete

Mixers

**MEYERS** Geared Road

Pumps

**CURTIS** Portable and

Stationary

Compressors

**LE ROI** Motors**BLAKE** Type Jaw

Crushers

**FULLER & JOHNSON**

Engines

**MILES** Conc. Block

Machines

**DOWIE** Centrifugal

Pumps

**HARDSCOG** Wouder

Drills

**ESSICK** Plaster Mixers**RED STAR** Wheelbar-

rows and Carts

**CORNISH** Crushing

Rolls

**WILLIAMSPORT** Wire

Rope

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## MISSOURI

**Bunting Hardware & Machinery Co.**

810-814 Walnut Street Kansas City, Mo.

T. L. Smith Company, Mixers.  
 Smith Engineering Works, Crushers, Elevators  
 and Screens.  
 Novo Engine Co., Gas Engines, Saw Rigs and  
 Pumps.  
 Sullivan Compressors and Drills.  
 Sterling Wheelbarrows.  
 Dravo Equipment Co., "American" Tubular  
 Towers.  
 American Wire Rope.  
 M & M Form Clamp Co.

Member Associated Equipment Distributors

**FUNKHOUSER EQUIPMENT CO.**2425 Jefferson Street  
KANSAS CITY MISSOURI*Representing:*

Lakewood Engineering Co.  
 Northwest Engineering Co.  
 Domestic Engine & Pump Co.  
 J. S. Mundy Hoisting Engine Co.  
 Jaeger Machine Co.  
 H. W. Roos Company  
 Climax Engineering Co.  
 McKiernan-Terry Drill Co.  
 Butler Bin Company

**G. C. KENNEY CO.***Road Building Equipment*701-2 N. Y. Life Bldg., Kansas City, Mo.  
128 West Avenue "E", Oklahoma City, Okla.

Phone: Victoria 1167

**REPRESENTING:**

Byers "Bearcat" Cranes  
 Multi-Foot Pavers  
 Ord Concrete Road Finishers  
 Marsh-Capron Rail Track Mixers  
 Freeman Turntables  
 Erie Bins and Buckets  
 Barber Greene Loaders  
 Ideal Concrete Block Machines  
 Galien Junior Rollers  
 O K Hoists and Compressors  
 Orton Cranes and Shovels

**G. W. VAN KEPPEL***Equipment for Contractors*

2045 Main Street, Kansas City, Missouri

*Representing*

KOEHRING COMPANY  
 C. H. & E. MFG. COMPANY  
 BLAW-KNOX COMPANY

## MISSOURI

**O. B. AVERY CO.**1325 Macklind Ave. St. Louis, Mo.  
*Contractors' Equipment and Supplies***REPRESENTING:**

Butler Bin Company  
 Northwest Engineering Company  
 Russell Grader Manufacturing Company  
 Sullivan Machinery Company  
 Koppel Industrial Car & Equipment Company  
 T. L. Smith Company  
 Leudinghaus Wagon Co.  
 The American Cement Machine Co.  
 Cleveland Wheelbarrow Company  
 G. H. Williams Co.  
 S. Flory Mfg. Co.  
 B. F. Goodrich Rubber Co.  
 Jeffrey Mfg. Co.  
 Union Iron Works, Inc.  
 Member: Associated Equipment Distributors

**CORBY SUPPLY COMPANY**

3942-46 West Pine Blvd., St. Louis, Mo.

*Representing*

AIAX ELECTRIC HAMMER CORPORATION  
 BUHL COMPANY—Portable Air Compressors  
 CROWE MFG. CO.—Portable Power Saws  
 DETROIT HOIST & MACH. CO.—Air Hoists  
 HARDGOGG—Rock Drills, Paving Breakers  
 WM. H. KELLER, Inc.—Super Pneumatic Tools  
 LATROBE TOOL CO.—Twist Drills, Reamers  
 PENNSYLVANIA—Air Compressors, Pumps  
 READING CHAIN & BLOCK CORP.—Hoists  
 RIVET CUTTING GUN CO.—Rivet Busters  
 N. A. STRAND & CO.—Flexible Shaft Equipment  
 UNION—Portable Woodworking Tools  
 VAN DORN—Electric Drills, Grinders  
 GUSTAV WIEDEKE & CO.—Tube Expanders

**FICKEISSEN-FINNEY EQUIPMENT CO.**

3620 Laclede Ave. St. Louis, Mo.

*Representing*

Byers Machine Co. Jones-Superior Mach. Co.  
 Novo Engine Co. Ideal Concrete Machy. Co.  
 Wood Shovel & Tool Co. Cleveland Wheelbarrow Co.  
 Multi-Foot Sales Co. Chassee Oil Burner Co.  
 Marsh-Capron Co. Hoistkins Steel Products Co.  
 American Tubular Towers

**LAWRENCE V. FRALEY**Buder Bldg., 707 Market St.,  
St. Louis, Missouri

Barber-Greene Company  
 The Fate-Root-Heath Company

*Standardized Material Handling and Road  
Building Machinery*

Self-Feeding Bucket Loaders  
 Standardized Portable Conveyors  
 Standardized Permanent Conveyors  
 B-G Trenching Machines  
 PLYMOUTH Gasoline Locomotives  
 Highway Trailers

**S. T. Hatcher & Company**  
4528 Easton Ave. St. Louis, Mo.

**REPRESENTING**

**KNICKERBOCKER**—Concrete Mixers, Mortar Mixers, Saw Rigs.  
**LAUSON**—Concrete Mixers, Diaphragm Pumps.  
**ARCHER IRON WORKS**—Steel Tower Hoists, Concrete Chutes, Concrete Buckets.  
**PARKS**—Woodworking Machines.  
**LE ROI**—Gasoline Engines.

**LAKEWOOD EQUIPMENT CO.**  
1714-16 North Broadway St. Louis, Mo.

**Representing**

**LAKEWOOD**—Paving, Building and Industrial Equipment  
**MUNDY**—Gas, Steam & Electric Hoists  
**GENERAL EXCAVATORS**—Shovels, Cranes, Skimmers, Draglines, Trench Hoes, etc.  
**MID-WEST**—Locomotives  
**REMMELE**—Tilting Mixers  
**AHLER'S**—Concrete Strength Regulators  
**KRESS**—Mixer Heaters and Thawers  
**REBSTOCK**—Conveyors and Elevators

**THE LINCOLN EQUIPMENT and MATERIALS COMPANY**  
1500 No. Broadway St. Louis, Mo.

**Representing**

Austin-Western Road Machinery Company  
Ransome Concrete Machinery Company  
Erie Steel Construction Company  
Wickwire-Spencer Steel Company  
English Bros. Machinery Company  
Ralph B. Carter Company  
Ingersoll-Rand Company

*We Have the Equipment and a Desire to Please*

**MONARCH EQUIPMENT CO., Inc.**  
4235 Duncan St. St. Louis, Mo.

**Representing**

**WILLIAMETTE IR. & STL. WKS.**—"Allison" Hoists  
**OKLAHOMA ENGR. & FDY. CO.**—"White" Hoists  
**MIAMI TRAILER-SCRAPER CO.**—"Miami" Scrapers  
**GUSTAV SCHAEFER WAGON CO.**—"Schaefer" Fresno  
**HUGHES-KEENAN CO.**—Steel Dump Bodies  
**WEBER COMPANY**—One-Man Graders  
**SCHRAMM, INC.**—T. I. E. D. Air Compressors

**MISSOURI**

**C. F. RABBEITT**

Railway Exchange Building

**SAINT LOUIS MISSOURI**

*Representing*

<b>ALBIOIL</b> —Concrete Heaters, Thawing Torches	<b>KOEHRING</b> —Pavers, Mixer Cranes, Shovels and Draglines
<b>CARR</b> —Form Graders	<b>LITTLEFORD</b> —Asphalt Heat ers, Pouring Pots, Paving Tools
<b>ARCHER</b> —Spouting Equipment	<b>STERLING</b> —Wheelbarrows and Carts
<b>BLAW-KNOX</b> —Batcher Plants, Bins, Road & Sidewalk Forms, Buckets	<b>A. W. FRENCH</b> —"ORD" Concrete Road Finishers
<b>C. H. &amp; E.</b> —Saw Rigs, Pumps, Hoists, Mortar Mixers	<b>WESTERN</b> —Cars and Trucks
<b>GOODROADS</b> —Gravel Plants, Crushers	<b>HUBER</b> —Gasoline Rollers
<b>MILES</b> —Concrete Block Machines	<b>SPORMAN</b> —Sack Cleaners, Balers
<b>CHICAGO PNEUMATIC TOOL CO.</b> —Air Compressors	<b>CONSTRUCTION MACHY. CO.</b> —Tilting Drum Mixers

**THE GEO. F. SMITH COMPANY**

**REPRESENTING**

<b>T. L. Smith Co.</b>	<b>Wyoming Shovel Works</b>
<b>Smith Engineering Works</b>	<b>Nye Steam Pump &amp; Mch. Co.</b>
<b>Sterling Wheelbarrow Co.</b>	<b>American Steel &amp; Wire Co.</b>
<b>Insley Mfg. Co.</b>	<b>McKiernan Terry Mill Co.</b>
<b>Clyde Iron Works</b>	<b>Hausk Mfg. Co.</b>
<b>Continental Engine &amp; Pump Co.</b>	<b>Continental Motors Co.</b>
<b>Universal Crane Co.</b>	<b>Le Roi Company</b>
<b>Owen Bucket Co.</b>	<b>Carlin Mfg. Co.</b>
<b>Sawman Bros.</b>	<b>Templeton Keady &amp; Co.</b>
<b>Saugan Derrick Co.</b>	

**Franklin and Channing Aves., ST. LOUIS**

Member: Associated Equipment Distributors

**TULLEY EQUIPMENT COMPANY**

*Contractors' and Industrial Equipment*

2339 Fine St. -x- St. Louis, Mo.

**REPRESENTING**

**Orion Crane & Shovel Co.**—Cranes, Drag Lines and Buckets  
**Chain Belt Company**, Pavers and Building Mixers  
**Burns Pump Company**, Contractors' Pumps  
**Easton Car & Construction Company**, Cars and Trucks  
**Orr & Seabower**, Gas Hoisting Engines, Boilers  
**George Hahn Mfg. Company**, Wagon Loaders and Conveyors  
**Helford, Road, Sidewalks, Curb and Gutter Forms**  
**Laford Company**, One Engines  
**C. S. Johnson Company**, Portable Bins and Hoppers  
**Climax Engineering Company**, Gas Engines  
**Milwaukee Locomotive Manufacturing Co.**, Gasoline Locomotives  
**Archer Iron Works**

**WEBER IMPLEMENT & AUTOMOBILE CO.**

10th & LOCUST ST

23rd & GRAND AVE.

241 N. First Ave.



**ST. LOUIS, MO.**

**KANSAS CITY, MO.**

Springfield, Ill.

**Representing:**

**CLEVELAND TRACTOR CO.**—Cietrac Tractors  
**MONARCH TRACTORS CO.**—Tractors  
**RUSSELL GRADER MFG. COMPANY**—Complete line of Road Building Machinery, Elevating Graders, Gravel Equipment, and Supplies  
**REX-WATSON CORPORATION**—Watson Bottom Dump Wagons  
**D-A LUBRICANT COMPANY**—Transmission and Truck Wheel Lubricants

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

MONTANA—NEBR.

NEBR.—NEW JERSEY

**Northwest Equipment Co. Inc.**

Butte, Great Falls, Billings, Montana

Complete Line of Road Machinery and  
Contractors' Equipment**RUSSELL ROAD EQUIPMENT**

Byers Bear Cuts	Keehring Mixers and Pavers
Bucyrus Shovels	Jacger Mixers
Owen Buckets	O. H. & E. Saw Rigs & Pumps
A. W. Traffic Treads	Barber Greene Loaders & Ditchers
Monarch Crawler Tractors	Telsmith Crushers, etc.

*"Our Customer Must Be Satisfied"***INTERSTATE  
MACHINERY & SUPPLY COMPANY**

OMAHA, NEB.

CLIMAX Trustworthy Engines  
 REX Mixers and Pavers  
 WONDER Mixers—Pumps—Hoists  
 NOVO Hoists—Pumps—Saw Rigs  
 HAISS Loaders  
 PLYMOUTH Gasoline Locomotives  
 NORTH WEST Cranes and Shovels  
 RED-EDGE Shovels and Picks  
 IDEAL Bloat Machines  
 STERLING Wheelbarrows  
 SAUERMAN Excavators and Scrapers

WILLIAMS Buckets  
 HOTCHKISS Forms  
 GARDNER Air Compressors  
 LAKEWOOD Engr. Co.

AMERICAN Wire Rope  
 BAY CITY Cranes  
 CHICAGO Aut. Conveyors  
 BUTLER Bins

Members: Associated Equipment Distributors

**WESTERN SUPPLY COMPANY**

802-812 East Iron St. Butte, Montana

Brederick & Bascom Rope Co.  
 E. & J. Dick Co., Inc.  
 Erie Steam Shovel Co.  
 Gardner Governor Company  
 Goodyear Tire & Rubber Co.  
 George Hais Mfg. Co.  
 Hell Company  
 The Monarch Machine Tool Co.  
 Nevo Engine Company  
 Ransome Concrete Machinery Co.  
 Speeder Machinery Corp.  
 Templeton & Kenly Co., Ltd.  
 Universal Road Machinery Co.  
 Westinghouse Electric & Mfg. Co.

**C. F. SEABROOK CO., Inc.**  
**BRIDGETON, N. J.**

NEW YORK MINEOLA ALBANY

*Representing:*

Caterpillar Tractor Co.  
 Athey Truss Wheel Co.  
 Fox Rotary Snow Broom Co.  
 General Excavator Co.  
 Good Roads Equipment Corp.  
 Hi-Way Service Corp.  
 Killefer Manufacturing Co.  
 La Plant-Chaste Mfg. Co.  
 Rex-Watson Corp.  
 Rotary Snow Plow Co.  
 Stockland Road Machinery Co.  
 Union Iron Works  
 Willamette Iron & Steel Works

**AMERICAN MACHINERY &  
SUPPLY CO.**

1113-17 HOWARD ST., OMAHA, NEBR.

*Representing*

MULTI-FOOTE Pavers  
 LINK-BELT Cranes and Shovels  
 UNIVERSAL Cranes  
 SPEEDER Cranes  
 S. FLOYD Hoists  
 JAEGER Mixers  
 NORTHERN Conveyors  
 SUPERIOR Saw Rigs  
 HELTZEL Bins, Forms  
 RED STAR Wheelbarrows  
 SULLIVAN Air Compressors and Tools

**CONTRACTORS EQUIPMENT CO.**  
Jersey Journal Bldg., Jersey City, N. J.*Representing*

Advance - Rumely Thresher Co. Inc.	G. M. T. Company, Inc.
American-Terry-Derrick Co.	Hazard Manufacturing Co.
American Tubler Elevator Co.	Independent Pneumatic Tool Co.
American Vitriol Products Co.	Lidgerwood Mfg. Co.
Atlas Powder Company	The T. L. Smith Company
Austin-Western Road Machy. Co.	Sterling Wheelbarrow Co.
Buffalo Steel Company	Sullivan Machinery Co.
Concrete Steel Company	Union Iron Works
	G. H. Williams Company
	Wyoming Shovel Works

**FUCHS  
EQUIPMENT COMPANY**  
OMAHA, NEB.*REPRESENTING:*

Smith Mixers and Pavers	Clyde Hoists
Blaw Knox Form, Buckets, Bins	General Wheelbarrows
Barber Greene Loaders, Conveyors	Leubben Hercules Cable
M & M Form Clamps	Atlas Shores
P & H Cranes, Shovels, Drag-Ins.	Le Roi Engines
Ingersoll-Rand Compressors	Erie Gravel Pumps
Whitcomb Locomotives	Twin City Engines
Tel-Smith Crushers	Waukesha Engines
Barnes Pumps	Woods Molybdenum Shovels
	and Concrete Road Finishers
	De Font Explosives

Member: Associated Equipment Distributors.

**JOHNSON & DEALAMAN, INC.**  
60 Marshall Street, Newark, N. J.*Representing*

Ransome Mixers and Chutes  
 P. & H. Gasoline Shovels and Cranes  
 Hoisting Engines  
 Hunding Pumps  
 Evinrude Centrifugal Pumps  
 Ingersoll-Rand Air Compressors  
 American Saw Rigs  
 Acroll Tar Kettles and Heaters  
 Red Star Wheelbarrows and Steel Batch Boxes  
 Concrete Carts  
 Bar Cutters and Bar Benders  
 Carbic Flame Lamps  
 Salamanders, Picks, Shovels, Etc.

When writing to advertisers, please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You



## NEW YORK

**A. P. BECKER**

ALBANY, N. Y.

Construction & Sales Engineering  
EQUIPMENT & MACHINERY

Allen Air-Turbines  
Blowers  
Boilers  
Conveyors  
Crushers  
Compressors  
Cranes  
Derricks  
Elevators  
Loaders  
Mixers  
Dump Wagons

Power Shovels  
Paving Mixers  
Pumps  
Rock Drills  
Screens  
Spouting Systems  
Storage Bins  
Steel Towers  
Trenching Machines  
F. W. D. Trucks  
Wood Workers

## NEW YORK

**H. W. BENKART**

501-2 Lafayette Bldg. Buffalo, N. Y.

*Representing*

Lakewood Engr. Co.—Road Plants and Concrete Equipment  
Harnischfeger Corp.—Gasoline Shovels, Trench Diggers  
Butler Bin Co.—Steel Bins and Measuring Devices  
Ahlers—Concrete Strength Regulator

**CONTRACTORS SALES CO., Inc.**

75 State Street Albany, N. Y.

*Representing*

Link Belt Company  
Lakewood Engineering Company  
Chicago Pneumatic Tool Company  
Lidgerwood Manufacturing Company  
Erie Steel Construction Company  
Galion Road Machinery  
Novo Engine Company  
Universal Crane Company

**W. B. MAY, Incorporated**

41 Perry St. Buffalo, N. Y.

*Representing*

Oliver Chilled Plow Works  
The Wehr Company  
Ruckstell Sales & Mfg. Co.  
Together with All the Leading  
Manufacturers of Fordson  
Tractor Equipment

**SLADE BROTHERS**

Ballston Spa New York

*Representing*

"CATERPILLAR TRACTOR CO.  
BAKER MANUFACTURING CO.  
D-A LUBRICANT CO.  
HI-WAY SERVICE CORP.  
LA PLANT-CHOATE MFG. CO.  
REX-WATSON COMPANY  
UNION IRON WORKS, INC.  
WILLIAMETTE IRON & STEEL  
WORKS

**H. B. TREVOR COMPANY**Larkin Terminal Warehouse Bldg.  
197 Van Rensselaer Street

Buffalo, N. Y.

*REPRESENTING:*

Koehring Company  
Insley Manufacturing Company  
Blaw-Knox  
Clyde Iron Works  
Barnes Manufacturing Company  
Beach Manufacturing Company  
McKiernan-Terry Drill Co.

**PHILLIPS & WEST, Inc.**

CONSTRUCTION EQUIPMENT

1773-77 60th St. Brooklyn, N. Y.

*Representing*

"O & S" Concrete Mixers and Hoists  
"TAL-FLO" Mortar and Plaster Mixers  
"HAUCK" Heaters and Thawing Outfits  
"BAY CITY" Shovel-Skimmer and Ditcher  
"20th CENTURY" Combination Woodworker  
"CRESENT" Woodworking Machinery  
"T. & M." Diaphragm, Centrifugal and Pressure  
Pumps  
"LE ROI" Engines and Parts

*Also*

Concrete Tower Equipment—Air Compressors  
and Accessories—Suction, Air and Water Hose  
Telephone: BEACHV.EW 2440-2441

**THE WHEELER-MURRAY CO.**

329-331 Ellicott St., Buffalo, N. Y.

Builders Exchange, 565 So. Clinton Ave.  
Rochester, N. Y. Syracuse, N. Y.*Representing*

RANSOME Pavers, Mixers, RICHMOND Screw Anchor  
Towers & Chutes Concrete Specialties  
NOVO Engines, Hoists and HOMELITE Electric Plants  
Pumps MEAD-MORRISON Crawler  
ORTON Locomotive Cranes Tractors  
A Shovels JONES-SUPERIOR Wood-  
ERIE Aggregators & Clam- workers  
shell Buckets ESSICK Plaster Mixers  
NATIONAL Hoists, Derricks, LITTLEFORD Heating Ket-  
File Drivers tles  
SIDNEY Wheelbarrows, HUG Road Building Trucks  
Scrapers & Plows WALSH Steel Snow Plows  
HOTCHKISS Steel Road, SCHRAMM Compressors  
Curb & Sidewalk Forms



## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

NEW YORK

**GEORGE D. CASE***Engineer and Contractor  
Road Building Equipment*

Horseheads, New York

Bell Phone 161

*Representing*

RUSSELL Road Machinery  
 MONARCH Tractors  
 HUBER Road Rollers  
 GELSER Concrete Pipes  
 Air Compressors—Dump Wagons—Steel Bridges  
 —Corrugated Pipe—Tractor & Truck Snow Plows.

NEW YORK

*"Brooks for Concrete Equipment"***R. E. BROOKS COMPANY***Equipment for Contractors*

50 Church Street, New York City

*Representing*

KOEHRING COMPANY  
 INSLEY MFG. COMPANY  
 C. H. & E. MFG. COMPANY  
 BLAW-KNOX COMPANY  
 BAY CITY FDY. & MACHINE COMPANY  
 CLYDE IRON WORKS  
 KWIK-MIX CONCRETE MIXER CO.  
 HANDY SACK BALEE COMPANY  
 ORD CONCRETE ROAD FINISHERS  
 WESTINGHOUSE NATL. COMPRESSORS

**EUGENE F. VAN NAME**

116 John Street Horseheads, N. Y.

*Representing*

Construction Machinery Co.—"Wunder" Mixers  
 Ames Road Machinery Co.—Rollers, Crushers, Power Graders  
 Caterpillar Tractor Co.—Tractors  
 The Milne Mfg. Co.—Concrete Block Machines  
 The Baker Mfg. Co.—Snow Plows  
 The Burch Plow Works Co.—Gas Shovels, Belt Conveyors  
 Isbell Mfg. Co.—Snow Removers  
 Schramm, Inc.—Air Compressors  
 Jackson Mfg. Co.—Wheelbarrows  
 The Rome Mfg. Co.—Graders  
 Helm Brick Machine Co.—Brick Machines  
 Hotchkiss Steel Products Co.—Concrete Road, Curb and Side-  
 walk Forms  
 Hanson Clutch & Mch'y. Co.—Excavators

**BROWN & SITES COMPANY***Specialists in Contractors' Equipment*

Main Office: 30 Church Street

NEW YORK CITY

*Exclusive Representative*

Lakewood Engineering Co.  
 Mundy Hoisting Engine Co.  
 Davenport Locomotive Company  
 Lawrence Machine Company

**DRAVO EQUIPMENT CO.**

21-57 Borden Ave., Long Island City, N. Y.

*REPRESENTING.*

Marsh Capron Concrete Mixers  
 Mead-Morrison Gasoline Shovels  
 Johnson Bins and Hoppers  
 Superior Saw Rigs  
 Cleveland Red Star Wheelbarrows, Carts,  
 Chutes and Batch Boxes.  
 Nove Engines, Hoists, Pumps and Air  
 Compressors  
 Aeroll Concrete Heaters

Members of Associated Equipment Distributors

**COMPLETE MACHINERY  
& EQUIPMENT CO., Inc.***"Specialists in Pumps"*

233 West 42nd St. New York, N. Y.

*REPRESENTING:*

Hamphryes Mfg. Co., Pumps, Diaphragm, Lift  
 and Force Plunger, and Centrifugal.  
 Leach Company, Oskosh, Concrete Mixers, Pav-  
 ers, Saw Rigs.  
 Economy Scaffold Co., Steel Horses, Standard and  
 Adjustable.  
 Compressors, Steel and Rope Blasting Mats.

RENTAL SERVICE

**GEORGE MALVESE & CO.**

Jericho Turnpike, Near Nassau Blvd.

GARDEN CITY PARK

Post Office: NEW HYDE PARK, N. Y.

*Representing:*

Cletrac Crawler Trac-	Ward Plows
tors	Lakewood Graderooters
Schaefer Automatic	Western Black Co.
Scrapers	Blocks
Rome Graders	Broderick & Bascom
Oil Jacks	Wire Rope
Euclid Scrapers	"Det" Lubricating
Acme Road Machines	Systems
Oliver Plows	Graphol Penetrating Oil
	Walsh Saw Plows

**THE FIREPROOF PRODUCTS CO.**

Incorporated

536-548 East 133rd Street... New York, N. Y.  
 562 Pierce Avenue... Long Island City, N. Y.  
 207 State Street... Schenectady, N. Y.  
 179-181 Ogden Street... Newark, N. J.

*Representing*

LEACH CO.—Concrete Mixers and Saw Rigs  
 BLAW KNOX CO.—Road, Sand and Gravel Equipment  
 PHILIP CAREY CO.—"Elastic" Expansion Joint  
 AMERICAN STEEL & WIRE CO.—Wire Fabric (Mesh  
 Reinforcement)  
 JONES & LAUGHLIN CO.—Bar Reinforcement  
 GENFIRE STEEL CO.—Expanded Metal, Metal Lath, Steel  
 Joists, Water and Dampproofing  
 CONCRETE CLIP AND WIRE CO.—Bar Benders, Mortar  
 Boxes, Wall Ties and Wall Anchors  
 LANSING CO.—Wheelbarrows, Concrete Carts  
 DAVID LUPTON'S SONS CO.—Steel Windows

Please mention the CONTRACTORS AND ENGINEERS MOSTLY—it helps.

## NEW YORK

**G. S. GREEN COMPANY, Inc.**  
*Construction Equipment & Supplies*  
 72-74 Warren St. New York City

*Agents and Distributors for:*

DOBBIE Derricks, Fittings, Lumber Trucks,  
 Sully Derricks, Winches, Sheaves and Gas-  
 line Hoists  
 SMITH Concrete Mixers  
 ORTON Cranes, Shovels & Clamshell Buckets  
 WRIGHT Chain Hoists & Trolleys  
 KEYSTONE Concrete Carts & Bar Benders  
 U. S. Electric Drills & Grinders  
 AJAX Pure Manila Rope  
 BARRETT & DUFF Jacks  
 Gasoline and Hand Diaphragm Pumps

## NEW YORK

**H. O. PENN MACHINERY CO., INC.**  
 18 East 41st St. New York City

*Representing*

CHAIN BELT CO. ARCHER IRON WKS.  
 Rex Mixers, Pavers Chuting Equipment  
 O. K. CLUTCH & J. I. CASE  
 MACHY CO. Road Rollers  
 Gas and Electric Hoists IDEAL CONC. MACHY.  
 CO.  
 BYERS MACHINE CO. Cement Block Machines  
 Cranes DOMESTIC ENG. &  
 BEACH MFG. CO. PUMP CO.  
 Saw Rigs High Pressure Pumps  
 BUTLER BIN CO. LINK-BELT CO.  
 Steel Bins, Batchers Cranes and Shovels  
 HOTOHKISS STEEL PRODUCTS CO.—Road and  
 Sidewalk Forms

Warehouse Stock — Service Station  
 Telephone: Lexington 0604-0605

**FRANK E. HALL**

152 W. 42nd St. New York City

*Construction Equipment**Representing:*

FOOTE Paving Mixers  
 FOOTE Heavy Duty Trailers  
 HELTZEL Steel Road Forms  
 ERIE Aggregometers and Clam Shell  
 Buckets.

Telephone, Wisconsin 7364

**RICHARDS & HIRSCHFELD, Inc.**  
 50 Church Street New York, N. Y.

*FOREIGN DEPARTMENT  
 (Export Trade)*

AMERICAN SAW MILL MACHY. CO.—Port-  
 able Saw Mills, Saw Benches, Woodworkers  
 ORR & SEMBOWER, INC.—Concrete Mixers,  
 Hoists, Steam Boilers  
 SMITH ENGINEERING WORKS—"Telamith"  
 Rock Crushers, Screens and Conveyors  
 POWER MFG. CO.—Semi-Deisel Oil Engines  
 AMERICAN SAW WORKS—Circular Saws  
 CHRISTIANA MACHINE WORKS—Water  
 Wheels, Gears

AGENTS THROUGHOUT THE WORLD

**THE HUBBARD-FLOYD CO.**

452 Lexington Ave. New York, N. Y.

*REPRESENTING*

NORTHWEST ENGINEERING CO. Cranes and Shovels  
 KNICKERBOCKER COMPANY Mixers and Saw Rigs  
 T. L. SMITH COMPANY Paving Mixers  
 LAKEWOOD ENGINEERING CO. Road Bldg. Mch.  
 L-T. TRACTOR COMPANY Five-Ton Tractors  
 ROGERS BROTHERS CORP. Heavy Duty Trailers  
 NATIONAL HOISTING ENG. CO. Gasoline Hoists  
 BARNES MANUFACTURING CO. Portable Pumps  
 INGERSOLL-RAND CO. Air Compressors  
 CONSTRUCTION MACHY. CO. "Wonder" Mixers

MEMBER: Associated Equipment Distributors

**C. F. SEABROOK CO., Inc.**  
 50 CHURCH ST. NEW YORK CITY

*Representing:*

Caterpillar Tractor Co.  
 Athey Truss Wheel Co.  
 Fox Rotary Snow Broom Co.  
 General Excavator Co.  
 Good Roads Equipment Corp.  
 Hi-Way Service Corp.  
 Killefer Manufacturing Co.  
 La Plant-Choate Mfg. Co.  
 Rex-Watson Corp.  
 Rotary Snow Plow Co.  
 Stockland Road Machinery Co.  
 Union Iron Works  
 Willamette Iron & Steel Works  
 ALBANY, N. Y. MINEOLA, L. I. BRIDGETON, N. J.

**E. B. KELLEY CO., Inc.***Concrete Machinery**and**Contractors' Equipment**Offices and Warehouses*

NEW YORK  
 NEWARK  
 ALBANY

PHILADELPHIA  
 ROCKVILLE CTR.  
 BUFFALO

JAEGER Concrete Mixers  
 SASGEN Derricks and Winches  
 HELTZEL Steel Sidewalk and Curb Forms

**BASHFORD-McCORD CORP.**  
 1346 University Ave., Rochester, N. Y.

*Representing*

Caterpillar Tractor Company  
 LaPlant-Choate Mfg. Company  
 Killefer Mfg. Company  
 Hi-Way Service Corporation  
 Toledo Pressed Steel Company  
 Marsh-Capron Company  
 D-A Lubricant Company  
 Union Iron Works  
 Gardner-Deuver Company

Do you mention the CONTRACTORS AND ENGINEERS MONTHLY when writing? Please do.

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

NEW YORK

**Haverstick & Company, Inc.**Ford and Spring Sts., Rochester, N. Y.  
ORE & SEMBOWER Concrete Mixers, Hoists & BoilersLANSING COMPANY. Barrows, Scrapers, etc.  
INGERSOLL-RAND COMPANY Air Compressors  
GARDNER-DENVER CO. Steam Pumps, Air CompressorsAMERICAN STEEL & WIRE CO. Wire Rope  
DOMESTIC ENGINE & PUMP CO. Pumping Units, Hoists, etc.D. BOUND & SONS CO. Chain Hoists, Winches  
DUFF MFG. CO., Hydraulic & Screw Jacks  
GOODYEAR TIRE & RUBBER CO. Mechanical Rubber GoodsGOULDS PUMPS, INC.  
CONNEAUT SHOVEL CO.  
BAKER MFG. CO. Baker Maney Scrapers, Bull-Dozers, Snow Plows

MULCONROY CO. Hose for every purpose

N. Y.—NO. CAROLINA

**J. B. NORTON COMPANY**

Incorporated

UTICA

NEW YORK

**REPRESENTING**

AVERY—Road Rollers, Tractors and Maintainers

AMERICAN—"Banner" Fence Posts

CONTINENTAL—"Red Jeal" Motors

CARL FRINK—Push Snow Plows

GALION—Road Rollers, Steam &amp; Gasoline &amp; Culvert Pipe

LANSING—Concrete Mixers

NELSON BROS.—"Monarch" Kerosene &amp; Gasoline Engines

ROTARY SNOW PLOW CO.—"Snow King" Rotary Plows

ROME—High Lift, Power and Tractor Drawn Graders

UNIVERSAL—Stone Crushers, Bins, Screening Plants, Car Unloaders, Street Sweepers, Scarifiers, Etc.

**BREWSTER & WILLIAMS, Inc.**

813 DILLAY BLDG.

SYRACUSE, N. Y.

**Contractors' Supplies and Equipment**

"REX" Mixers and Pavers

BLAW-KNOX Road Equipment

CAREY "ELASTITE" Expansion Joint

AMERICAN STEEL &amp; WIRE CO. Mesh Reinforcement

LITTLEFORD Asphalt Heaters and Tools

C. H. &amp; E. Saw Rigs, Pumps and Hoists

HAISS Loaders and Conveyors

MILBURN Portable Carbide Lights

H. W. ROOS CO., Shores and Column Clamps

Member: Associated Equipment Distributors

**Asheville Supply & Foundry Co.**

33 Eagle Street

ASHEVILLE, N. C.

**Representing**

ATLAS POWDER CO.—Dynamite, Powder, Blasting Supplies

LINK BELT CO.—Crawler Cranes, Shovels, Draglines, Etc.

THE KNICKERBOCKER CO.—Revolving Type Mixers

CONSTRUCTION MACHV. CO.—Tilting Drum Mixers

NOVO ENGINE CO.—Gasoline Engines Power &amp; Diaphragm Pumps and Hoists

COLUMBIA ROPE CO.—"Tape Marked Manila Rope

J. D. WALLACE &amp; CO.—Portable El. Woodworking Machines

BLACK &amp; DECKER MFG. CO. Portable El. Drills &amp; Grinders

AMERICAN SAW MILL MACHV. CO.—Woodworking Machinery

CONCRETE STEEL CO.—Havensmeyer Laid &amp; Fireproofing Materials

INGERSOLL-RAND CO.—Air Compressors &amp; Pneumatic Tools

**MILLER EQUIPMENT CO., Inc.**

Syracuse

New York

**Representing**

MEAD-MORRISON Hoisting Outfits.

INGERSOLL-RAND Compressors.

LEACH Concrete Mixers and Saw Rigs.

DOMESTIC Pumps.

PARSONS Trenchers.

MASSILLON Shovel.

NORTHERN Conveyors.

ARCHER Tower Hoists.

**SUTTON-OSBORNE SUPPLY CO.**

196 Clingman Ave.

Asheville, N. C.

**Representing**

AMERICAN CEMENT MACH. CO.—"BOSS" Concrete Mixers and Hoists

CHICAGO—Air Compressors, Sinker Drills, Etc.

HERCULES—Explosives

JEFFREY—Material Handling Equipment

McMYLER-INTERSTATE—Shovels &amp; Cranes

TOLEDO—Concrete Barrows &amp; Carts

H. K. WOOD—"Moly" Shovels

We also carry a complete line of  
Contractors' Supplies at all times**J. SHUMAN HOWER****MATERIAL HANDLING EQUIPMENT**

106 Foster Bldg.

Utica, N. Y.

**Representing**

UNIVERSAL CRANE CO.—Cranes

LINK-BELT CO.—Shovels and Conveyors

G. H. WILLIAMS CO.—Buckets

C. S. JOHNSON CO.—Bins and Hoppers

RALPH B. CARTER CO.—Pumps

IRVING IRON WORKS CO.—Grating, Armoring

Re-enforcement

SCHRAMM, INC.—Compressors

AMERICAN CABLE CO.—"TRU-LAY" Wire Rope

**AMERICAN HARDWARE & EQUIP. CO.**

CHARLOTTE

NO. CAROLINA

**Representing:**

T. L. Smith Company

Bucyrus Company

Hotchkiss Steel Products Co.

The Lidgerwood Company

Koppel Industrial Car &amp; Equip. Co.

Fruehauf Trailer Company

Gardner-Denver Company

Acme Road Machinery Co.

C. H. &amp; E. Mfg. Company

Union Explosives Company

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

## NO. CAROLINA—OHIO

## OHIO

### W. FRED CASEY & COMPANY

Charlotte North Carolina

## Representing

Ransome Concrete Mach. Co.  
Mundy Hoisting Engine Co.  
Amer. Saw Mill Mch'y. Co.  
Cleveland Wheelbarrow Co.  
Wyoming Shovel Co.  
LeROI Company  
Williamsport Wire Rope Co.  
Peerless Mach'y. Co.  
(Plaster Mixers)  
Price-Evans Foundry Corp.  
Atlantic Terra Cotta Co.

Atlanta Terra Cotta Co.  
Crittall Casement Window Co.  
S. H. Pomeroy Co. (Metal Windows)  
United Metal Products Co.  
Varsity Fire Door Co.  
The Majestic Co. (Coal Chutes)  
Keweenaw Incinerator Co.  
Ev-Air-Tight Calking Co.  
Knoburn Products Corp.  
Bates Valve Bag Co.

### The Geo. B. Curd Equipment Co.

600-811 Reading Road  
CINCINNATI, OHIO

## Distributors:

Lakewood Engr'g. Co.—Concrete Mixers, Steel Towers etc.  
Baker Mfg. Co.—Baker-Maney Wheel Scrapers  
Barnes Mfg. Co.—Pumping Machinery  
Atlas Engineering Co.—Conveyors  
Geo. Halse Mfg. Co.—Wagon Loaders  
LePlant-Cheate Mfg. Co.—Tractor Dump Trailers  
Mundy Sales Corp.—Hoisting Equipment  
Butler Bin Co.—Steel Bins, Measuring Hoppers  
Universal Crane Co.—Truck Mounted Cranes  
Monarch Tractor Corp.—Tractors  
Wehr Co.—Graders  
General Excavator Co.—Excavators

Member: Associated Equipment Distributors

### E. F. CRAVEN COMPANY

"The Road Machinery Men"

Greensboro North Carolina

Russell Grader Mfg. Co.  
Erie Steam Shovel Co.  
Buffalo-Springfield Roller Co.  
Ingersoll-Rand Co.  
Western Wheel Scraper Co.  
Domestic Engine & Pump Co.  
Littleford Brothers  
Universal Crane Co.  
Carbie Manufacturing Co.  
Wiard Plow Co.  
Brodrick & Bascom Rope Co.  
Rawls Highway Mowers  
Fulton Tent & Bag Co.  
Joseph Lay Co.  
Manly Jail Co.

Archer Iron Works  
Baker Manufacturing Co.  
Wyoming Shovel Co.  
Sterling Wheelbarrow Co.  
Chain Belt Co.  
G. H. Williams Co.  
George Halse Mfg. Co.  
Monarch Tractors Corp.  
Universal Crusher Co.  
Beebe Brothers—Hoists  
Carborundum Co.  
Midwest Oil Co.  
Hercules Stump Pullers  
Metal Form Corporation  
LeROI Company

### THE KELLY SPRING COMPANY

CINCINNATI, OHIO

2245 Bogen St. Phone: West 1404

## Representing

E. J. McHarg Co.—Multi-Foot Pavers  
Bay City Dredge Works—Tractor Shovels, Cranes, Skimmers  
Gallon Iron Works—Road Rollers, Graders, Scrapers  
Columbus Conveyor Co.—Belt, Bucket Conveyors, etc.  
Deister Concentrator Co.—Vibrating Screen, Screening  
New Holland Machine Co.—Rock Crushers & Pulverizers  
Orton Crane & Shovel Co.—Shovels, Cranes, Draglines  
American Cement Mach. Co.—Tilting, Non-Tilting Mixers, Alley Pavers and Hoist

ALSO

A Complete Line of Contractor's Equipment and Supplies

### J. D. WILKINS

Office and Warehouse—West Lee Street  
Greensboro, North Carolina

## Representing

Clyde Iron Works Sales Company  
Leach Company  
Ralph B. Carter Company  
Saugen Derrick Company  
Archer Iron Works  
Sauerman Brothers  
Williamsport Wire Rope Company  
Jackson Mfg. Company  
Schramm, Incorporated  
F. L. Rogers & Co. (Wedack El. Hand Saw)  
American Mfg. Company (Shovels)

### THE QUEEN CITY SUPPLY CO.

Pearl & Elm Sts. Cincinnati, Ohio

## REPRESENTING

Erie Steam Shovel Co.—Steam Shovels  
Chain Belt Co.—Building and Paving Mixers  
Clyde Iron Works Co.—Hoisting Engines  
Saugen Derrick Co.—Derricks, etc.  
Ingersoll-Rand Co.—Compressors, Drills, etc.  
Heltzell Steel Form & Iron Co.—Road Forms  
Hercules Motor Corp.—Gas and Gasoline Engines  
Wyoming Shovel Co.—Red Edge Picks and Shovels  
Rex-Watson Corp.—Dump Wagons, Tractors and Trailers  
Domestic Engine & Pump Co.

Cincinnati's Largest Equipment House

Member: Associated Equipment Distributors

### J. C. NEELY & CO.

201 Goldberg Building  
CANTON, OHIO

## Representing

ATLAS Portable Conveyors  
REPUBLIC Concrete Mixers  
GOOD ROADS MACHY. CO. Road Building Equipment  
CONNERY Tar and Asphalt Kettles  
DOMESTIC Pumps and Air Compressors  
Railway Equipment — Tar and Asphalt Products  
Reinforcing Steel — Railway Culvert Pipe

### Bacon Engineering Sales Co.,

MARVIN J. BACON, Manager

251 Erie Bldg. Cleveland, Ohio

REX PAVING MIXERS

REX BUILDING MIXERS

McMYLER CRANES

ERIE AGGREGATE PLANTS

MIDWEST LOCOMOTIVES

BARNES PUMPS

HOTCHKISS STEEL FORMS

MUNDY "S" SPEED HOISTS

Cleveland Warehouse Rental Service

Phone—Superior 939.



## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## OHIO

**The Day & Maddock Company**

*Contractors' New and Rebuilt Equipment*  
 West 82nd St. So. of Denison Ave., Cleveland, O.  
 Chas. Hvass & Co., Inc. —Fluashers, Sprinklers  
 American-Terry Derrick Co. —Derricks  
 Heltsel Steel Form & Iron Co. —Sidewalk Forms  
 Huber Manufacturing Co. —Rollers  
 Humphries Mfg. Co. —Diaphragm Pumps  
 Knickerbocker Company —Mixers  
 Marion Steam Shovel Co. —Shovels & Cranes  
 E. J. McHarg & Co. —Multi-Feet Pavers  
 Orton Crane & Shovel Co. —Cranes  
 Owen Bucket Co. —Clamshell Buckets  
 Remmel Manufacturing Co. —Tilting Mixers  
 Sterling Wheelbarrow Co. —Wheelbarrows  
 Sullivan Machinery Co. —Air Compressors  
 Thomas Elevator Co. —Hoists  
 Geo. Haiss Mfg. Co. —Loaders & Conveyors  
 McKiernan-Terry Drill Co. —Pile Hammers  
 Members: Associated Equipment Distributors

**DRAVO EQUIPMENT COMPANY**

4800 Prospect Avenue, Cleveland, Ohio

**Representing**

THRU—Cranes and Shovels.  
 MARSH-CAPRON—Rail Track Concrete Mixers.  
 KWIK-MIX—Tilting Concrete Mixers and Plaster Mixers.  
 MEAD-MORRISON—Crawler Tractors, Car Pullers, Hoists, etc.  
 KOVO—Pumps, Hoists, Compressors, Engines.  
 BARNES—Portable Air Compressors.  
 CLEVELAND RED STAR—Wheelbarrows, Concrete Buggies, etc.  
 ATLAS—Portable Conveyors.  
 JONES SUPERIOR—Saw Rigs.  
 AEROLL—Oil Burners, Torches, Kettles, etc.

Members of Associated Equipment Distributors

**THE W. M. PATTISON SUPPLY CO.**

777 Rockwell Ave., Cleveland, Ohio

**Representing**

American Saw Mill Mach. Co.—Wood Working Machinery.  
 Domestic Eng. & Pump Co.—Contractors Pumps.  
 Emerson Pump Co.—Emerson Steam Pumps.  
 Ingersoll-Rand Co.—Air Compressors and Tools.  
 Archer Iron Works—Tower Equipment.  
 Jaeger Machine Co.—Concrete Mixers.  
 Orr & Sombower, Inc.—Hoisting Engines, Boilers.  
 Sagen Derrick Co.—Derricks, Winches.  
 Wall Rope Company—Manila Rope.  
 Rex-Watson Corp.—Contractors' Dump Wagons.  
 Western Wheelbarrow Co.—Scrapers.  
 Wickwire-Spencer Steel Co.—Wire Rope.

Member: Associated Equipment Distributors

**Peden Equipment Co.**

10230 Berea Rd.

Cleveland, Ohio

The Lakewood Engineering Company, Concrete Mixers, Chuting Plants, etc.  
 Northwest Engineering Company, Gas Shovels, Cranes and Draglines  
 Austin-Western Ed. Machy. Co., Rollers, Graders, Wagons, etc.  
 Butler Bin Company, Steel Bins and Measuring Hoppers  
 Leach Co., Tilting Drum Mixers and Saw Rigs  
 O. K. Clutch & Machy. Co., Gas and Electric Hoists  
 Heltsel Steel & Iron Company, Road and Sidewalk Forms  
 Sterling Wheelbarrow Company

## OHIO

**E. F. PEGG EQUIPMENT CO.**

130 Engineers Bldg. Cleveland, O.

Main 4158

Ransome Concrete Mixers & Chuting Plants.  
 National Hoists—Electric, Steam & Gasoline  
 National Pile Hammers.  
 Universal Screening Plants and Unloaders  
 Berg Concrete Surfacers, Finishers and Electric Air Cushioned Hammer  
 Bay City Dredge Works

**THE POPE EQUIPMENT CO.**

Kent Pope, Pres.

4111 Euclid Ave., Cleveland, Ohio

**Transportation Engineers**

TROY Trailers and Wagons—All Sizes  
 LESSMANN Loaders  
 HARRINGTON-SEABERG Traffic Signals  
 SOLAR, STURGES City Street Waste Boxes  
 Municipal Equipment

**TOWER MACHINERY COMPANY**

4900 Euclid Avenue

CLEVELAND, OHIO

**DISTRIBUTORS OF CONTRACTORS' EQUIPMENT FOR BUILDING, PAVING, GENERAL CONSTRUCTION, QUARRY, MINING AND GRAVEL PIT MACHINERY**

**Representing**

THE T. L. SMITH CO.  
 SMITH ENGINEERING WORKS  
 LITTLE WONDER SCAFFOLDING CO.  
 STERLING WHEELBARROW CO.  
 CENTURY BAG CLEANER CO.  
 M & M WIRE CLAMP CO.  
 ARCHER IRON WORKS

**McNEILLY MACHINERY COMPANY**

335 South High Street Columbus, Ohio

**Representing**

The Parsons Co. —McKiernan-Terry Drill Co.  
 Trenching Machines, etc. —Pile Hammers, Jacks  
 Northwest Eng. Co. —Sagen Derrick Co.  
 Electric & Gasoline Cranes —Derricks, Winches, etc.  
 Shovels and Draglines —Hercules Motors Corp.  
 Mead-Morrison Co. —Gasoline Engines  
 Hoisting Mach. Tractors, —Le Roi Co.  
 Buckets, Gasoline Cranes —Gasoline Engines  
 Blystone Mfg. Co. —Pulso-meter Steam Pump  
 Concrete, Mortar and Plaster Mixers —Co., Pumps  
 Dobbie Fdy. & Mach. Co. —The T. L. Smith Co.  
 Derricks & Fittings —Concrete Mixers & Pavers  
 Erie Steel Constr. Co. —The Buhl Co.—Air Compressors  
 Aggregators, Steel Bins

When writing to advertisers, please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You



## OHIO

## N. C.—OHIO

**MILBURN MACHINERY CO.**

141 N. FRONT ST.

COLUMBUS, OHIO

*Representing*

INSLEY MFG. CO.—Placing Equipment, Excavators  
SMITH ENGR. WORKS—Crushers and Washing Plants  
HARNISCHFEGGER SALES CORP.—Shovels and Cranes  
CHAIN BELT CO.—Rex Pavers and Mixers  
THOMAS ELEVATOR CO.—Electric Hoists  
ORR & SEMBOWER—Steam Hoists and Boilers  
GEO. HAISS MFG. CO.—Loaders and Conveyors  
INGERSOLL-RAND CO.—Compressors and Tools  
OWEN BUCKET CO.—Clamshell Buckets  
DOMESTIC ENGINE & PUMP CO.—Pumps  
LITTLE WONDER SCAFFOLDING CO.—Scaffolding Hangers  
PIONEER BUCKET CO.—Shackline Outfits  
HIGHWAY TRAILER CO.—Trailers

Members: Associated Equipment Distributors

**W. A. KUHLMAN & CO.****CONTRACTORS' EQUIPMENT**

540-342-344 Water Street, TOLEDO, OHIO

Smith Pavers and Building Mixers  
Smith Crushers and Quarry Equipment  
Northern Conveyors and Steel Storage Rins  
Sanborn Drag Line Outfits  
Barnes Pumping Outfits  
Clyde Hoists and Derricks  
Metaform Steel Road and Sidewalk Forms  
Sagen Wooden Derricks and Winches  
Inaley Excavators, Steel Towers, Mast Hoist, Air  
Compressors, Saw Tables, Wire Rope  
G. H. Williams Clamshell Buckets  
McKiernan-Terry, Steam Hammers, Etc.  
Erle Steam and Gas + Air Shovels

Member: Associated Equipment Distributors

**C. L. STITH COMPANY**

305 Franklin Bldg.,

High &amp; Main Sts.

COLUMBUS, OHIO

*Representing*

FOOTE CO.—Paving Mixers  
BARNES MFG. CO.—Pumps,  
Air Compressors  
LITTLEFORD BROS.—Tar  
and Asphalt Kettles  
JAEGER MACHINE CO.—  
Concrete Mixers  
CHICAGO AUTO. CONVEY-  
OR CO.—Portable Con-  
veyors  
CURTIS PNEUMATIC MA-  
CHINERY CO.—Fordson  
Air Compressors  
CLEVELAND ROCK DRILL  
CO.—Rock Drills, Paving  
Breakers  
EAGLE WAGON WORKS.—  
Dump Wagons  
TOLEDO DUMP GATE  
SPREADER & SUPPLY  
CO.—Dump Gate Spread-  
ers  
ALUMOYD SIGNAL & SIGN  
CO., CHICAGO—Reflect-  
ing Signals and Street Signs  
SAGEN DERRICK CO.—Derricks, Winches

**The National Supply  
Company**

TOLEDO, OHIO

*Contractors' Equipment and Supplies***DISTRIBUTORS FOR**

Ingersoll-Rand Company  
Essex Plaster Mixer Company  
Bannock Concrete Machine Company  
Wevo Engine Company  
George Haisz Mfg. Co., Inc.  
Hotchkiss Steel Forms  
Roshling's Wire Rope  
Red Edge Shovels  
and other high class goods.

**The W. W. Williams Co.**

COLUMBUS, CLEVELAND, TOLEDO CINCINNATI

*Representing*

The Koehring Company.  
The Sterling Motor Truck Co.  
The C. H. & E. Mfg. Co.  
Hug Company  
The Sterling Wheelbarrow Company  
A. W. French & Co.  
Blaw-Knox Co.  
Construction Machinery Co.  
S. Flory Mfg. Co.  
The Beaumont Co.  
Cleveland Tractor Co.  
Schramm, Inc.

and other well-known manufacturers of  
contractors' equipment.**THE TOLEDO SALES & ENGINE CO.**

16 No. St. Clair St.

Toledo, Ohio

*Representing*

Relay Motors Corp.  
Motor Trucks  
Mundy Hoisting Eng. Co.  
Bay City Dredge Works  
The Knickerbocker Co.  
The Kwik-Mix Co.  
Schramm, Inc.  
Gardner-Denver Co.  
Rumsey Pump Co.  
Dayton-Dawd Pump Co.  
The Trans Co.  
Cleveland Wheelbarrow Co.  
F. L. Rogers & Co., (Electric  
Hand Saws)  
The Cement Shovel Co.  
Slick Spray Equip. Co.  
Aerial Burner Company  
Tolado Pressed Steel Co.  
(Safety Trenches)  
Lockwood Motor Co.  
Sudnick—Conveyors  
The Elto Outboard Motor Co.  
Hutchinson Mfg. Co.  
(Woodworkers)  
The Alexander Milburn Co.  
(Welding Equip.)  
Abram Mfg. Co., (Concrete  
Tools)  
Cleveland Rank Drill Co.,  
(Pneumatic Tools)  
"Complete Repair Shop for Outside Service"

**T. J. LANE EQUIPMENT COMPANY***Everything for the Contractor*

SPRINGFIELD, OHIO

*Representing*

The Chain Belt Company, Rex Pavers, Building Mixers  
Hoffert Steel Form Company, Steel Road Forms  
Barnes Manufacturing Company, Road and Diaphragm Pumps  
Freeman Manufacturing Co., Turntables for Road Builders  
C. S. Johnson Company, Steel Bins  
Bay City Dredge Co., Cranes, Grading and Sewer Excavators  
Street Brothers, Steam, Electric and Gasoline Hoists  
Sagen Derrick Company, All Kinds of Derricks  
Jas. Henshaw Company, Tar Heaters and Sand Dryers

**J. R. VANKEPPEL**

211 William St.

Toledo, Ohio

*Representing:*

NORTHWEST ENGINEERING COMPANY  
LAKEWOOD ENGINEERING COMPANY  
FAIRFIELD ENGINEERING COMPANY  
THE PARSONS COMPANY  
NELSON IRON WORKS  
MULTI FOOTE PAVERS  
ACME ROAD GRINDERS

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

OHIO—OKLA.—ORE.

OREGON

**J. WALKER WILSON****CONTRACTORS' MACHINERY**

1009 Mahoning Bank Bldg.

YOUNGSTOWN

OHIO

**EXCLUSIVE SALES AGENT**

For Keystone Driller Company in Northern Ohio and Northwestern Pennsylvania.

Keystone Traction Excavator for Road Grading, Trenching, Back-Filling, and Cellar Digging

The Locomotive Crane Co.

Blaw-Knox Co.

The Foster Co., Inc.

Telephone 3-5766

**FEENAUGHTY MACHINERY CO.****Road & Contractors' Equipment**

309-315 E. Yamhill St., Portland, Ore.

**Representing**Austin Manufacturing Co.  
Austin Western Road Machinery Co.

Baker Manufacturing Co.

Bates Manufacturing Co.

F. O. Cummey &amp; Son Co.

The Foster Company, Inc.

Penna. Boiler Works.

Four Wheel Drive Auto Co.

Chicago Pneumatic Tool Co.

Janger Machine Co.

Nichols &amp; Shepard Co.

Birdsell Mfg. Co.

Hart Grain Weigher Co.

La Plant-Choate Mfg. Co.

Hill Diesel Eng. Co.

Newport Rolling Mill Co.

The Russell Company.

Sterling Wheelbarrow Co.

St. Marys Oil Engine Co.

Thow Shovel Co.

Troy Wagon Works Co.

Universal Crane Co.

Western Wheeled Scraper Co.

Webb City &amp; Carterville

Foundry &amp; Machine Works

Amer. Saw Mill Machy. Co.

The Owen Bucket Co.

Littleford Bros.

**The Boardman Company****Contractors' Equipment**

Oklahoma City

Oklahoma

**REPRESENTING**

Caterpillar Tractor Company

Athey Truss Wheel Company

The Baker Manufacturing Company

The LaPlant-Choate Mfg. Company

Western Wheeled Scraper Company

The Killefer Manufacturing Company

Page Fence &amp; Wire Products Association

**J. L. LATTURE EQUIPMENT CO.**

312-14 E. Madison St. Portland, Ore.

**Representing**

Keystone Driller Co.

The Knickerbocker Co.

Atlas Imperial Engine Co.

Ideal Concrete Machinery Co.

American Steel Scraper Co.

Wood Shovel &amp; Tool Co.

Union Iron Works

Blaw-Knox Company

Rex-Watson Corp.

Rome Mfg. Co.

Larson Mfg. Company

Le Roi Company

Climax Engineering Co.

Lamb Machine Company

Rix Compressor Company

Chas. Hyatt Mfg. Co.

The Macfod Company

Hercules Trailer Mfg. Co.

S. Flury Mfg. Company

American Mfg. &amp; Engr. Co.

R. H. Beaumont Co.

**C. F. CAMP COMPANY**

221-23 East Archer Street

Tulsa, Okla.

C. H. &amp; E. Pumps

GARDNER-DENVER Pumps

MARCO Lighting Plants

ROCK ISLAND Tractors

WAUKESHA Gasoline Motors

SUPERIOR Diamond Core Drills

**LOGGERS & CONTRACTORS  
MACHINERY COMPANY**

70 Fourth St.

Portland, Ore.

**Representing**

Caterpillar Tractor Co.

Chain Belt Co.

Erie Steam Shovel Co.

Insley Manufacturing Co.

J. S. Mundy Hoisting Engine Co.

G. H. Williams Co.

Wyoming Shovel Works

Killefer Manufacturing Co.

Buckeye Traction Ditcher Co.

**CLYDE EQUIPMENT CO.****Contractors' Equipment and Supplies**

Portland, Oregon

Seattle, Wash.

Acme Road Machy. Co.

Eyers Machine Co.

Clyde Iron Works

Lakewood Engrg. Co.

Lee Trailer &amp; Body Co.

Lincoln Electric Co.

Rucyrus Co.

Ohio Loco. Crane Co.

Sauerman Brothers

Sidney Steel Scraper Co.

Sterling Wheelbarrow Co.

Sullivan Machy. Co.

Traylor Eng. &amp; Mfg. Co.

Rotary Snow Plow Co.

McKiernan-Terry Drill

Co.

Member: Associated Equipment Distributors

**McCracken-Ripley Co.**

61-67 Albina Ave.

Portland, Ore.

**REPRESENTING**

Ransome Conc. Machy. Co.—Mixers, Etc.

Atlas Lumnite Cement Co.—Lumnite Cement

Atlas Portland Cement Co.—White Cement

Union Metal Mfg. Co.—Union Metal Columns

M. &amp; M. Form Clamp Co.—Form Clamps

Blystone Mfg. Co.—Plaster Mixers

Cleveland Wheelbarrow &amp; Mfg. Co.—Red Star

Wheelbarrows, Concrete Cars

Construction Machinery Co.—Wonder Mixers and

Hoists

Pacific Coast Steel Co.—Reinforcing Steel

Full Supply of Building Specialties

Please mention the CONTRACTORS AND ENGINEERS MONTHLY—it helps.

## OREGON—PA.

**MITCHELL, LEWIS & STAYER CO.**  
330 E. Morrison St. Portland, Ore.*Representing*

Willamette Iron & Steel Works  
Wehr Company  
Universal Power Shovel Co.  
Whitehead & Kales Co.  
Schramm, Inc.  
Solano Iron Works  
Anthony Company

**TRACKSON FULL-CRAWLER CO.**  
360 E. Morrison St. Portland, Ore.*Representing*

Trackson Full-Crawler Attachments for Fordson Tractors  
Perry Automatic Scrapers  
W. A. Riddell Co.  
French & Hecht  
Lehdahl Mill Attachments  
Ersted Manufacturing Company  
Hughes-Keenan Company  
Plymouth Foundry & Machine Works  
W. W. Feed Grinder Company  
Moline Implement Company  
Picking Governor Company  
"H. H." Manufacturing Company  
Blackwell & Sundee (Coughran Seat Spring Attachments)  
Ralph N. Brudie Co. (Brodie Auxiliary Transmissions)

**JAMES F. BOYER**

31-32 Swank Annex Bldg., Johnstown, Pa.

EVERYTHING FOR THE ROAD BUILDER

*Representing*

ACME ROAD MACHINERY COMPANY  
ROME MANUFACTURING COMPANY  
NEW HOLLAND MACHINE COMPANY  
JACKSON MANUFACTURING CO.  
WHEELING CORRUGATING COMPANY  
ENDURANCE - SERVICE - QUALITY

**HERR "THE PUMP MAN"**  
Lancaster Penna.*Representing:*

Goula Pumps, Inc., Pumps  
Construction Machinery Co., Mixers and Hoists  
Century Electric Co., Motors  
Buch Mfg. Co., Barrows  
Louden Machinery Co., Barn Equipment  
Domestic Engine & Pump Co., Hoists and Compressors & Pumps  
Fuller & Johnson Co., Gas Engines  
Wood Working Machinery

## PENNSYLVANIA

**CONTRACTORSEQUIPMENT**  
**CONBOY CO.**  
CONSTRUCTION MACHINERY  
Perry Bldg. Philadelphia*Representing*

Baker-Manny Scrapers  
Charter Fuel Oil & Kerosene Engines  
Minster Gasoline Engines  
Orr & Sembower—Concrete Mixers, Hoists, Boilers  
Clamshell Buckets  
Burch Stone Spreaders, Unloaders and Conveyors

**DE HUFF AND HOPKINS***Engineering Equipment*

Morris Building, Philadelphia, Pa.

*Representing*

BAY CITY DREDGE WORKS  
Power Operated Shovels  
CHAUSSE OIL BURNER COMPANY  
Portable Asphalt Plants, Asphalt Pools, Etc.  
EASTON CAR & CONSTRUCTION COMPANY  
Car and Track Equipment for Contractors, Dump Bodies, Measuring Hoppers, etc.  
MILWAUKEE LOCOMOTIVE MFG. COMPANY  
4-speed Geared Type Gasoline Locomotives  
BROOKVILLE LOCOMOTIVE COMPANY  
Ford & Fordson Locomotives  
Nelson Bucket Loaders  
Sluice Gates & Shear Gates

**Dravo Equipment Company**

1505 Race St. Philadelphia, Pa.

ROME Graders  
AMERICAN Tubular Elevator Towers  
AHLEES Strength Regulator  
BARNES Pumps  
MEAD-MORRISON Hoists, Tractors and Cranes  
CLEVELAND Wheelbarrows and Carts  
JONES Superior Saw Tables  
Air Compressors, Sidewalk, Curb and Gutter Forms

Members of Associated Equipment Distributors

**EDELEN & BOYER CO.**  
Construction and Industrial Equipment

Office &amp; Warehouse 238 No. 23rd St., Philadelphia, Pa.

*Representing*

Foots Paving Mixtures  
Freeman Turntables  
Fremont Drags and Scrapers  
Helford Steel Road, Sidewalk, Curb and Gutter Forms  
Seagen Derricks and Elevators  
Union Steam Pile Hammer  
Wunder Mixers and Pumps  
Milne Block Machines  
Pulsometer Steam Pumps  
Graders and Scarifiers  
Nelson Loaders  
Heavy Platform Trailers  
Material Bins and Batches  
Hayward Clam Shell Buckets  
Building Mixers, Concrete Towers and Chuting Plants  
Hoisting Engines, Boilers  
Stiff Leg and Guy Derricks  
Saw Rigs, Road Builders Equip  
Canvas and Burlap Covers  
Jackson Wheelbarrows, Pails  
Shovels, Cement Tools, etc.

Member: Associated Equipment Distributors

## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## PENNSYLVANIA

**GILES & RANSOME**

231-33 No. 12th St., Philadelphia, Pa.  
202 Long Bldg., Baltimore, Md.

**Ransome Concrete Machinery Co.**—  
Concrete Mixers and Appliances.

**Blaw-Knox Company**—Clam-shell Buckets, Steel Forms, Steel Buildings, Steel Bins.

**Richmond Screw Anchor Company**—  
Concrete Specialties.

**The Barnes Mfg. Co.**—Centrifugal Diaphragm and Force Pumps.

**Northwest Engineering Co.**—Gasoline. Cranes and shovels.

**Ord**—Road Finishing Machine.

## PENNSYLVANIA

**STALEY & MORRIS, Inc.**

214-220 N. 22nd St. Philadelphia, Pa.

## DISTRIBUTORS

**REX** Concrete Mixers, Pavers  
**BUTLER** Bins, Batch Hoppers  
**LITTLEFORD** Kettles, Asphalt  
Tools  
**DOMESTIC** Pumps, Hoists,  
Compressors  
**CUMMER** Asphalt Plants,  
Dryers  
**J. T.** Tractors  
**BEACH** Saw Rigs  
**ATLAS** Mortar & Plaster Mixers,  
Conveyors, Skidder Shovels  
**ANCHER** Concrete Chuting  
**M & M** Form Clamps  
**LeROI** Engines  
**TOLEDO** Wheelbarrows  
**UNIVERSAL** Block Makers  
**MULTIPLEX** Block Machines  
**PEERLESS** Brick Machines  
**BARRETT** Lift Trucks  
**METAL FORM** Sidewalk, Road  
and Curb Forms  
Everything For the Contractor and Cement Products Manufacturer

**MEMBERS:** Associated Equipment Distributor

**SERVICE EQUIPMENT COMPANY**

*Sales Engineers*

211 North Third Street, Philadelphia, Pa.

## REPRESENTING:

**Knickerbocker** Mixers,  
Saw Rigs  
**O. K.** Hoists, Air  
Compressors  
**LeROI** Engines  
**Toledo** Wheelbarrows  
**U. S.** Standard Block  
Machine  
**Lauson** Pumps and  
Tilting Mixers  
**Skidder** Shovels  
**Hauk** Heaters  
**Archer** Tower Equip-  
ment  
**Saxon** Derricks  
**Milburn** Lights  
**Hawley** Tie Bolt Co.  
**Economy** Scaffold Co.  
**Ind. Fdry.** Builders'  
Heavy Hardware

Member: Associated Equipment Distributors

**LEE T. WARD CO.**

617 Filbert St.

Philadelphia

## REPRESENTING

**General** Wheelbarrow Co.  
**Byers** Machine Co.  
**C. H. & E.** Mfg. Co.  
**Erie** Steel Construction Co.  
**Hetchkiss** Steel Form Co.  
**Ideal** Concrete Machinery Co.  
**Jaeger** Machine Co.  
**Koehring** Co.  
**National** Hoisting Engine Co.  
**Universal** Form Clamp Co.

**SERVICE SUPPLY CORPORATION**

20th and Venango Sts.  
Philadelphia, Pa.

**American** Cement Machine Co.—Bore Concrete Mixers  
**Owen** Bucket Co.—Clam Shell Buckets  
**A. Flory** Mfg. Co.—Gasoline, Steam & Elec. Hoists & Cableways  
**Archer** Iron Works—Concrete Towers and Spouting  
**Edgcomb** Clamp Co.—Concrete Form Clamps  
**LeROI** Engine Co.—Gasoline Engines  
**The MacLeod** Co.—Melting Furnaces & Concrete Heaters  
**Connaut** Shovel Co.—Connaut Special Shovels  
**Ralph B. Carter** Co.—"Hundings" Diaphragm Pumps  
**Lawrence** Pump & Engine Co.—Vertis Centrifugal Pumps  
**Cement** Block Maky. Co.—Cement Block Machines  
**Sidney** Steel Scraper Co.—Scrapers, Carts and Wheelbarrows  
**Ferry** Co.—Ferry Automatic Scrapers

**ALLEGHENY EQUIPMENT CORPORATION**

1315-CE Union Bank Bldg. Pittsburgh, Pa.

## Distributors for

**SULLIVAN MACHINERY CO.**  
Portable Compressors and Air Tools  
**THE KNICKERBOCKER CO.**  
Concrete Mixers and Saw Rigs  
**AMERICAN-TERRY DERRICK CO.**  
Steel & Timber Stiff Leg & Guy Derricks  
**NATIONAL HOISTING ENGINE CO.**  
Steam, Electric and Gasoline Hoists  
**THE HAYWARD COMPANY**  
Orange Peel and Clam Shell Buckets

**J. Jacob Shannon & Co.**

1744 Market Street 1744  
PHILADELPHIA

## REPRESENTING:

**"Mandy"** Steam, Elec-  
tric & Gasoline Hsts.  
**"Nero"** Gasoline Eng.  
and Outfits  
**"Lakewood"** Con-  
crete Mixers, Chute Equip-  
ment, Road Equip.  
**"Williams"** Clam Shell  
Buckets  
**"Terry"** Steel Erec-  
tors' Derricks  
**"Sterling"** Wheelbar-  
rows and Carts  
**"Yale"** Hardware &  
Chain Hoists  
**"Koebling"** Wire Rope  
**"Wyoming"** Red Edge  
Shovels  
**"Saagen"** Derricks &  
Winches  
**"Berg"** Gen. Sur-  
factors & Finishers  
**"Bates"** Wire Ties &  
Tying Tools  
**"Emerson"** Pumps  
**"Shannon"** Derricks &  
Derrick Fittings

**BECKWITH MACH'Y CO.**

PITTSBURGH

PHILADELPHIA

**Anchor** Concrete Mash'ry  
**Baker** Manay Scrapers  
**Beach** Portable Saws  
**Blount** Mixers  
**Caterpillar** Tractors  
**Clyde** Hoists & Engines  
**Dobbie** Derrick Fittings  
**Humblyen** Pumps  
**Isley** Conveyors  
**Isley** Towers & Chutes  
**LaPlant** Chute Wagons

**Lochen** Wire Ropes  
**Le Roi** & Hercules Engines  
**McKernan-Terry** Hammers  
**Nagle** Ballers  
**Northern** Conveyors  
**Pulhameter** Pumps  
**Sagen** Derricks  
**Sauerman** Cable Ways  
**Smith** Mixers and Pavers  
**Smith** Crushers

Member: Associated Equipment Distributors

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



## PENNSYLVANIA

**C. H. ARNOLD COMPANY, Inc.**

*Road and Street Machinery  
Contractors' Equipment*

629-30 Park Bldg. Pittsburgh, Pa.

*Representing*

RUSSELL GRADER MFG. CO.—Road Machinery and Gravel Equipment.

THE FOOTE CO.—"Multifoote" Paving Mixers  
BLAW-KNOX CO.—Steel Road and Sidewalk Forms, Bins, etc.

A. W. FRENCH & CO.—"ORD" Concrete Road Finishers

## PA.—SO. CAROLINA

**Pittsburgh Machinery & Equipment Company**

Fulton Bldg. Pittsburgh, Pa.

*Contractors' Machinery  
In Stock at Aspinwall, Pa.*

**ERIE STEAM SHOVELS**

Locomotive Cranes  
Dinky Locomotives  
Road Rollers  
Hoisting Engines  
Concrete Mixers  
Pumps, Derricks, Buckets  
Rock Crushers

**THE BRINKER SUPPLY CO.**

403 Oliver Avenue Pittsburgh, Pa.

*Representing*

LITTLEFORD Tar Heaters

HUBER Rollers and Tractors

CANTON Culvert Pipe

BURCH Car Unloaders and Stone Spreaders

HELTZEL Steel Road Forms

BOSS Mixers

HANOVER Traffic Signals

EDWARDS Graders

W. A. RIDDELL Power Graders

**IN PITTSBURGH!****RUANE MACHINERY CO.**

*Warehouse, Office and Yard:*

Corner W. Robinson and Dasher Streets

*Represents:*

RANSOME CONCRETE MACHINERY CO.—

Mixers, Pavers, Chuting Plants.

OSGOOD COMPANY—Steam Shovels.

IDEAL CONCRETE MACHINERY COMPANY—

Concrete Block Plants.

BOOS-MEYER-HECHT COMPANY—

Atlas Adjustable Shores.

O. K. CLUTCH & MACHINERY CO.—

Hoists and Compressors.

CHICAGO AUTOMATIC CONVEY. CO.—

Portable Conveyors.

ERIE STEEL CONST. CO.—Aggremeters and

Clamshell Buckets.

**DRAVO EQUIPMENT CO.**

300 Penn Avenue, Pittsburgh, Pa.

AMERICAN Tubular Towers

MEAD-MORRISON—Tractors, Car Pullers,

Buckets, Hoists, Crawler Cranes and Shovels.

WOVO—Pumps, Hoists, Engines 1½ to 40-H.P.

MARSH-CAPEON—Rail Track and Tilting

Mixers

JOHNSON—Demountable Bins, Hoppers.

JONES-SUPERIOR—Saw Rigs.

BARNES—Portable Air Compressors.

GILMAN—Rock Drills.

Snow Plows

Members of Associated Equipment Distributors

**THE ZIEGLER MACH'Y CO.**  
**PITTSBURGH**

**CONTRACTORS' EQUIPMENT**

Office and Warehouse  
Pittsburgh, Pa.

Yards and Shops  
Rook, Pa.

**REPRESENTING**

Austin Mfg. Co.

Austin-Western Road Machin-

ery Co.

Butler Bin Co.

C. H. & E. Mfg. Co.

Payco Block Machines

Harding Wonder Drill Co.

Ingersoll-Rand Co.

Jager Machine Co.

Kochling Co.

Cleveland Tractor Co.

M. & M. Form Clamp Co.

Monarch Corp.

Monarch Tractors.

Mundy Hoisting Equipment.

Rotary Snow Plow Co.

Rea-Walton Corp.

**MARTIN J. O'BRIEN CO., Inc.**

1607 Union Bank Bldg.

Pittsburgh, Penna.

Trackshifters—Underground Shovels

Bay City Semi-Circular Cranes

Bay City Skimmers

Heisler Geared Locomotives

Austin Backfillers and Trenchers

Fairmont Mining Machinery

Leahy Vibrating Screens

**GIBBS MACHINERY COMPANY**

Columbia, South Carolina

*Representing*

CLEVELAND TRACTOR CO.—Tractors

AMERICAN SAW MILL MACHINERY CO.—Woodworking Machinery and Equipment

BAY CITY DREDGE WORKS—Shovels, Cranes, Draglines and Tractor Shovels

UNION STEAM PUMP CO.—Compressors and Pumps

CHAS. HYASS & CO.—Sweepers, Asphalt Distributors, Sprinklers, etc.

TOLEDO PRESSED STEEL CO.—"Toledo" Turbines

RICHMOND FORGING CO.—Grader Blades

*Also*

Road Graders and Rollers, Bolters, Steam and Gasoline Engines



## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

S. C.—S. D.—TENN.

TENNESSEE

**Jeff Hunt Road Machinery Co.**  
**Columbia So. Carolina**
*Distributors of*

"CATERPILLAR" Tractors  
 RUSSELL Road Machinery  
 REX Mixers and Pavers  
 D-A Lubricants  
 THEW Shovels  
 KILLEFER Farm Machinery  
 "RED EDGE" Shovels  
 BAKER MANUFACTURING CO.  
 LAKEWOOD ENGINEERING CO.

**MILLS & LUPTON SUPPLY CO.**  
**"SUPER SERVICE"**
**Contractors' Equipment**  
**Chattanooga Tennessee**

*Representing*  
 Jaeger Concrete Mixers  
 Helmet Forms, Flexplane Machines, Bins and  
 Batches  
 Rome High-Lift Graders  
 Sullivan Portable Air Compressors  
 Speeder Gasoline Shovels  
 Domestic Engine and Pumps  
 Street Hoists and Cableways  
 A full line of Mill, Contractor and Electrical  
 Supplies  
*Write for literature and prices*

**STANDARD MACHINERY & EQUIPMENT CO**

**SPARTANBURG**  
**CUMMER** Asphalt Plants  
**BUFFALO-SPRINGFIELD**  
 Rollers  
**ERIE** Steam Shovels & Cranes  
**MULTI-FOOTE** Pavers  
**BUTLER** Bins & Hoppers  
**HUG** Truck and Dump Bodies  
**BARBER-GREENE** Loaders  
**WHITCOMB** Locomotives  
**HANDY** Sack Cleaners & Balers  
**ERIE** Chain Shell Buckets  
**INGERSOLL-RAND CO.** Com-  
 pressors  
**ANDRESEN** Repair Outfits  
**LITTLEFORD** Asphalt Tools  
**UNION** File Drives  
**SHUNK MFG. CO.** Blades  
**HAMMEL** Oil Burners

**S. C.**  
**JAEGER** Concrete Mixers  
**HUG CO.** Sub-grades  
**HELTZEL** Road Forms  
**SUPERIOR** Dump Bodies  
**WESTERN** Wheeled Scrapers  
**EAGLE** Dump Wagons  
**DOMESTIC** Pumps & Hoists  
**AMERICAN** Derricks & Hoists  
**BURCH** Stone Spreaders  
**EMERSON** Steam Pumps  
**STERLING** Wheelbarrows  
**WYOMING** Shovels  
**MORROW** Screening Plants  
**ARCHER** Concrete Chuting  
**LOGERWOOD** Hoists  
**BAKER** Backfillers  
**CARBIC MFG. CO.** Lights  
**WILLIAMSPORT** Wire Rope

Members of Associated Equipment Distributors

**NIXON-HASSELLE CO.****Chattanooga, Tennessee****CONTRACTORS' EQUIPMENT**

**Blaw-Knox** Buckets and Forms  
**C. H. & E.** Saw Rigs, Pumps and Hoists  
**Cameron** Pumps  
**Haise** Loaders and Conveyors  
**Ingersoll-Rand** Compressors  
**Rex** Mixers and Pavers  
**Northwest** Cranes and Shovels  
**Fenestra** Steel Sash  
**Archer** Tower and Spouting Equipment  
**Vulcan** Steam and Gasoline Locomotives  
**Parsons** Trench Machines and Backfillers  
 Also Wheelbarrows—Carts—Benders—Cutters—  
 Shovels—etc.

**"He Profits Most, Who Serves Best."****WESTERN MATERIAL COMPANY****Sioux Falls****South Dakota****DISTRIBUTORS:**

**Caterpillar** Tractor Co.  
**Construction Mch. Co.**  
**Western** Wheeled  
 Scraper Co.  
**Barber-Greene** Co.  
**Moro** Engine Co.  
**Blaw-Knox** Co.  
**Iowa** Mfg. Co.  
**M & M** Form Clamp Co.  
**Northwest** Shovels and  
 Cranes  
**Littleford** Bros.  
**Member:** Associated Equipment Distributors

**La Plant-Choate** Co.  
**Rotary** Snow King  
**Carry** Roofing and  
 Elastic  
**Manhattan** Belting  
**Yellowstrand** Wire Rope  
**Wausau** Snow Plows  
**Sterling** Wheelbarrows  
**Wood "Moly"** Shovels  
**D-A** Lubricant  
**Holt** Combine Harves-  
 ters  
**Snow** Fence

**R. L. HARRIS****Knorrville  
Tenn.***Representing*

**Buffalo-Springfield** Roller Co.  
**A. B. Farguhar, Ltd.**  
**Huber**  
**Burch** Flow Works  
**Good** Roads Machinery Co.  
**Foots** Concrete Machine Co.  
**Construction** Machinery Co.  
**Western** Wheeled Scraper Co.  
**Wood** Drill Works  
**Blaw-Knox** Co.  
**Caterpillar** Tractor Co.  
**Erie** Steam Shovel Co.  
**Domestic** Engine & Pump Co.  
**Ingersoll-Rand** Co.  
**Lakewood** Engr. Co.  
**La Plant-Choate** Mfg. Co.  
**Russell** Grader Mfg. Co.  
**Rex-Watson** Corp.  
**Wyoming** Shovel Works

**Member: Associated Equipment Distributors****L.J.BREDEQUIPMENT CO.****JAMES BUILDING****CHATTANOOGA TENNESSEE***Representing*

**Northern** Engineering Company  
**Orton** Crane & Shovel Company  
**Chicago** Pneumatic Tool Company  
**The Bahn-Larson** Tool Company  
**Ohio** Machine Tool Company  
**The Fats-Eest-Heath** Company  
**Easton** Car & Construction Co.  
**Williamsport** Wire Rope Co.  
**And others.**

**W. D. BANKER ROAD**  
**MACHINERY CO.**
**489 South Main St. Memphis, Tenn.***Representing*

**RUSSELL** GRADER MFG. CO.  
**BYERS** MACHINE COMPANY  
**HERCULES** POWDER CO.  
**CONSTRUCTION** MACHINERY CO.  
**CONNEAUT** SHOVEL COMPANY  
**SCHRAMM, INCORPORATED**

When writing to advertisers, please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.

## TENNESSEE

**CHOCTAW CULVERT AND  
MACHINERY COMPANY**

Corner 2nd and Butler Streets, MEMPHIS, TENN.

*Representing*Jaeger Machine Co.  
Sterling Wheelbarrow Co.  
Heltzel Steel Form & Iron  
CompanyLittleford Brothers  
Thew Shovel Company  
Buffalo-Springfield Roller  
CompanyE. D. Ebyre & Company  
Acme Road Machinery Co.Archer Iron Works  
The Foote Company  
Barnes Mfg. Co.  
Beach Mfg. Co.  
Wyoming Shovel Works  
Wood Shovel and Tool Co.  
Clyde Iron Works  
Hercules Powder Co.  
Handy Sack Baler Co.  
Alan Wood Iron and Steel  
Company**DEALER EQUIPMENT &  
IMPLEMENT CO.**

1434 Riverside Drive, Memphis, Tenn.

*Representing*

UNIVERSAL POWER SHOVEL CO.

TRACKSON COMPANY

WILLAMETTE IRON & STEEL WORKS  
WEHR COMPANY

MIAMI TRAILER-SCRAPER CO.

HUGHES-KEENAN COMPANY

DORSEY BROTHERS

**MEMPHIS TRACTOR COMPANY**  
503 South Third Street  
MEMPHIS, TENN.*Distributors of*CLETRAC AND MONARCH Crawler  
TractorsEUCLID Scraper and Fresno  
WHIZ Transmission LubricantNew and used parts for all Tractors,  
Rebuilt motors**PIDGEON-THOMAS IRON CO.**

94 No. Second St.

Memphis, Tenn.

*Representing*P. & H. Gasoline Shovels,  
Cranes and Draglines,  
THE HUG CO. Turntables,  
ADAMSON Locomotives on  
Furds.SIDNEY Scrapers and Plows.  
METAFORMS for Roads,  
Sidewalks, Curb and Gut-  
ter, Manholes, etc.AMERICAN Spiral Pipe  
NOWO ENGINE COMPANY.  
RANSOME CONCRETE  
MACHINERY CO.  
NORTHERN CONV. &  
MFG. CO.JOS. HONHORST Asphalt  
Heating Kettles, Tools, etc.  
MONARCH Tractors.WHITCOMB Gasoline Loco-  
motives.LINCOLN Electric Motors.  
BLYSTONE Plaster Mixers.AMERICAN Wire Rope, Re-  
inforcing Wire FabricUNIVERSAL FORM &  
CLAMP CO.SYMONS CLAMP & MFG.  
CO.

HIGHWAY TRAILER CO.

## TENN.—TEXAS

**THE RIECHMAN-CROSBY CO.**  
223-29 South Front St., Memphis, Tenn.*Representing*AMERICAN SAW MILL MACHY. CO.—Saw Mill and Wood-  
working Machinery

AMERICAN STEAM PUMP CO.—Pumps of all Kinds

LEACH CO.—Concrete Mixers, Tools, etc.

LIDGERWOOD MFG. CO.—Hoists, etc.

ALAMO ENGINE CO.—Gasoline engines

A. LESCHEN &amp; SONS ROPE CO.—"Hercules" Wire Rope

PLYMOUTH CORDAGE CO.—"Plymouth" Manila Rope

A. STREITCH &amp; BRO. CO.—Lumber Buggies, Dump Wagons

LINK BELT CO.—Conveyor and Transmission Equipment

H. W. CALDWELL &amp; SON CO.—Conveying Equipment

THE BUDA CO.—Railroad Equipment and Supplies

CHICAGO PNEUMATIC TOOL CO.—Air Drills, Portable  
Air Compressors, etc.*Also a complete line of all kinds of tools  
and equipment for contractors***HARVILL SUPPLY COMPANY**

415 Commerce Street

NASHVILLE

TENNESSEE

Jaeger Machine Co., Concrete Mixers.  
Sullivan Machy. Co., Air Compressors,  
Rock Drills.

Byers Machine Co., Cranes, Shovels.

Iowa Manufacturing Co., Rock Crushers.

Novo Engine Co., Gasoline Engines,

Pumps and Hoists.

Charles Hvass & Co., Street Sweepers,  
Sprinklers, Etc.**Wilson-Weesner-Wilkinson Co.**

NASHVILLE

TENNESSEE

*Representing*

Kochring Co.

Blaw-Knox Co.

Barber-Greene Co.

Clyde Iron Works

Construction Machy. Co.

C. H. and E. Mfg. Co.

Archer Iron Works

Western-Wheeled Scraper Co.

Austin-Western Rd. Machy. Co.

Ord Finishing Machines

Littleford Bros. Insley Mfg. Co.

Ingersoll-Rand Co. McKiernan-Terry Drill Co.

*Warehouse Stocks and Service.*

NASHVILLE - KNOXVILLE - JACKSON

Members of Associated Equipment Distributors

**J. W. BARTHOLOW COMPANY***Machinery Contractors' Equipment and Supplies*

1221 SOUTH LAMAR ST., DALLAS, TEXAS

1704-6-8 JONES ST., FORT WORTH, TEXAS

RANSOME Mixers, Chutes

CLYDE Hoists &amp; Derricks

JONES Saw Rigs

BLYSTONE Plaster Mixer

DOMESTIC Pumps

WYOMING Shovels, Picks

AKRON Wheelbarrows

WIARD Piles

CYCLONE Drills

SULLIVAN Air Compressor

ROOS Shovels

McKERNAN-TERRY Pile Hammers, Jacks, Etc.

MEMBER: Associated Equipment Distributors

# DISTRIBUTORS OF CONTRACTORS' EQUIPMENT TEXAS

## **BRIGGS-WEAVER MACHINERY CO.** 309 N. Market St. Dallas, Texas

### *Representing*

P & H Elevators  
SMITH Concrete and Mortar Mixers  
NOVO Pumps, Engines and Hoisting Equipment  
AMERICAN Saw Rigs  
"RED STAR" Concrete Carts and Wheelbarrows  
McLEOD'S Asphalt Trucks and Mixers

WOODS Molybdenum Shovels and Pique Shovels  
LESCHEN "Red Strand" Wire Rope  
INGERSOLL-RAND Air Compressors and Pneumatic Tools  
WILLIAMS Clamshell and Dragline Buckets

*Repair Parts for All Machines*

## **BROWNING-FERRIS MACHINERY COMPANY**

Dallas — Houston — Amarillo

### *Representing*

Orton Crane & Shovel Co.  
Barber-Greene Company  
O. H. & E. Manufacturing Co.  
Sterling Wheelbarrow Co.  
Jaeger Machine Company  
Byers Machine Co.  
Heltzel Steel Form & Iron Co.  
Ingersoll-Rand Co.  
Foots Concrete Machinery Co.  
Buffalo-Springfield Roller Co.  
Littleford Bros.

## **ROE L. JOHNSON**

425 San Antonio St. El Paso, Tex.

### *Representing*

Ransome Concrete Machinery Co.  
The Galion Iron Works & Mfg. Co.  
S. Flory Mfg. Co.  
The Conneaut Shovel Co.  
Sidney Steel Scraper Co.  
The Warren Tool & Forge Co.  
The Warren Handle Works Co.  
The Perry Co.

## **SHEEHAN & COMPANY**

*Steel Products and Contractors' Equipment*

1615 Bassett Avenue El Paso, Texas

### **REPRESENTING**

T. L. Smith Co.  
Smith Eng. Works  
Barber-Greene Co.  
The Le Roi Co.  
J. D. Adams & Co.  
Cleveland Tractor Co.

Inaley Mfg. Co.  
Monarch Tractors  
Acme Road Mch. Co.  
Ingersoll-Rand Co.  
Sauerman Bros.  
The Sterling Wheelbarrow Co.

## **R. B. EVERETT & CO.**

3112-3118 Harrisburg Boulevard, Houston, Texas

Lakewood Eng. Co.—Concrete Mixers, Handling Equipment  
Erie Steel Construction Co.—Batcher Plants  
Clyde Iron Works Sales Co.—Hoisting Machinery  
Hardschlag Corp.—Gasoline Cranes, Draglines, Shovels, etc.  
Universal Form Clamp Co.—Form Clamps  
McKernan-Terry Drill Co.—Pile Hammers, etc.  
New Engine Company—Gasoline Engines and Outfits  
Canney & Co.—Asphalt Kettles and Tools  
Wyoming Shovel Works—Red Edge Shovels and Picks  
Cleveland Wheelbarrow Co.—Red Star Wheelbarrows  
Bates Valve Bag Co.—Wire Reinforcing Ties  
Jaeger Machine Co.—Concrete Mixers  
Pulsometer Steam Pump Co.—Steam Pumps  
Patent Scaffolding Co.—Safety Bracing Scaffolds  
Barber-Greene—Conveyors, Ditchers, and Wagon Loaders  
Buffalo Springfield Roller Co.—Road Rollers  
Sullivan Masby, Co.—Air Compressors  
Sawmen Bros.—Cableways, etc.  
Member: Associated Equipment Distributors

## **F. W. GARTNER COMPANY**

3315 McKinney Avenue HOUSTON, TEXAS

### *Contractors' Equipment*

Rex Mixers & Pavers  
Blaw Knox Batchers plants  
Clamshell Buckets, Turn  
Tables and Buildings  
Carbide Lights  
Climax Trustworthy Engines  
Le Roi Engines  
Rogers Brothers Trailers  
Acme Road Rollers  
Parsons Trenching Machines, Backfillers  
Northwest Crawler Cranes, Gas Shovels, Draglines  
Seeger Concrete Equipment  
Koppel Industrial cars  
Gen. Halm Loaders, Conveyors  
Barnes Pumps  
Page Dragline Buckets  
Mundy Hoisting Equipment  
Edwards Bar Cutters, Sanders  
Eagle Dump Wagons  
Blystone Mixers  
Humbert Kettles  
Roughan Paving Gauge  
Abram Cement Tools  
MacLeod Oil Burners  
M & M Form Clamps  
Plymouth Locomotives  
Maudslayi Air Compressors  
Jones Superior Saw Rigs  
Member: Associated Equipment Distributors

## **ALAMO IRON WORKS**

130 Santa Clara St., San Antonio, Texas

### *Representing*

SMITH Mixers and Pavers  
LE ROI Engines  
RED STAR Wheelbarrows  
GARDNER Compressors  
ERIE Steam Shovels  
WILLIAMS Buckets  
BARBER-GREENE and Conveyors  
HELTZEL Steel Forms  
MO-LYB-DEN-U 1 Shovels  
TELSMITH Rock Crushers  
SYNTRON Electric Hammers  
SKILSAW Electric Saw  
SIDNEY Woodworking Machinery  
SUPERIOR Woodworkers  
EVINRUDE Pumps  
WILLIAMSPORT Wire Rope  
WAUGH Rock Drills and Jackhammers  
O & S Hoists and Boilers

## **WILSON TANK & CULVERT CO.**

520-26 Carolina St. San Antonio, Texas

### **REPRESENTING:**

Thew Shovel Co.  
Tractocrane Co.  
Austin Western Road Machinery Co.  
Stewart Iron Works Co.  
and many other lines relative to road, street, water works and sewer building and installation.

## UTAH—VIRGINIA

**THE C. H. JONES COMPANY**  
*Contractors' and Railway Equipment*

206 So. West Temple St., Salt Lake City, Utah

*Representing*

The Jaeger Machine Co.—Concrete Mixers and Pavers.  
Gallen Iron Wks. & Mfg. Co.—Road Building Machinery  
Lakewood Engineering Co.—Road & Constr. Equipment.  
Link-Belt Co.—Gasoline Cranes, Dracines and Shovels.  
A. C. Herr Co.—Concrete Hardners, Builders, Specialists.  
H. W. Caldwell & Son Co.—Elevating, Conveying and  
Transmission Machinery.  
The Diamond Rubber Co.—Belting, Hoses and Packing.  
The Buda Co.—Truck Supplies, Railroad Equipment.  
U. S. Cast Iron Pipe & Fdy Co.—Water Works pipes.  
Wilmington Fibre Specialty Co.—Vulcanized Fibre Sheets, Rods  
and Tubes

Stocks are carried in our Salt Lake warehouse and we solicit  
your inquiries and orders.

## VIRGINIA

**EARNEST BROS.**

805 E. Franklin St., Richmond, Va.

*Representing*

KOEHLING Mixers, Pavers, Cranes, Shovels,  
Bar Cutters and Benders.  
BLAW-KNOX Steel Forms, Steel Dins, Measuring  
Batchers, Clamshell Buckets, Truck  
Turntables, Inundation.  
C. H. & E. Power Pumping Outfits, Saw Rigs, etc.  
KEYSTONE Excavators, Gas and Steam Shovels.  
LAKEWOOD Finishing Machine.  
INSLEY Mfg. Co.  
MUNDY Hoisting Equipment.

**AND OTHER WELL KNOWN PRODUCTS****GENERAL UTILITIES CO., Inc.**

256 Tazewell St.

Norfolk, Virginia

*Representing*

Chain Belt Co.	C. S. Johnson Co.
Barber-Greene Co.	Charles Hyatt & Co.
Fate-Roth-Heath Co.	Barnes Mfg. Co.
Meltzel Steel Form & Iron Co.	Lee Trailer & Body Co.
Byers Machine Co.	Northwest Eng. Co.
Huber Mfg. Co.	Toledo Pressed Stl. Co.
Elgin St. Sweeper Co.	Universal Generator Co.
Owen Bucket Co.	Saagen Derrick Co.
Burch Plow Works	Archer Iron Works
	Hug Company
	Boyer Fire App. Co.

Member: Associated Equipment Distributors

**GEO. E. HOPPE**801 McDonough Street  
RICHMOND, VA.*Representing***JAEGER MACHINE CO.  
THE LINK-BELT CO.**

And other manufacturers furnish-  
ing a complete line of equipment  
for Contractors and Industrial  
Plants, including oils and greases.

Member: Associated Equipment Distributors

**LEWTER F. HOBBS**

Incorporated

Norfolk, Virginia

**CONTRACTORS' EQUIPMENT***Representing*

KNICKERBOCKER Mixers  
NATIONAL Holists  
CHICAGO PNEUMATIC Compressors  
FAIRFIELD Conveyors  
UNITED STATES Asphalt Plants  
FREEMAN Turntables  
EMERSON Pumps  
FARQUHAR Boilers  
H. & B. Pumps  
CRESCENT Pipe Molds

*Any Machine for the Contractor***JOS. S. POTTS, JR. & COMPANY***Factory Sales Engineers*

Travelers Bldg., Richmond, Va.

*Representing*

Erie Steam Shovel Co.	Page Engineering Co.
G. H. Williams Co.	Denver Rock Dr. Mfg. Co.
S. Flory Mfg. Co.	The Macloed Company
A. Leschen & Sons Rope Co.	Archer Iron Works
McKiernan-Terry Dr. Co.	The Browning Crane Co.
Milwaukee Loco. Mfg. Co.	The Wickes Boiler Co.

And other leading manufacturers

**GRAHAM BRIGHT  
SALES COMPANY, Inc.**

901 Electric Bldg. Richmond, Va.

*Representing:*

The Harnischfeger Corporation  
The T. L. Smith Company  
The Domestic Engine & Pump Company  
The Easton Car & Construction Company  
The George D. Whitcomb Company  
The Acme Road Machinery Company  
The Chicago Automatic Conveyor Company  
The Russell Grader Mfg. Company  
The Clyde Iron Works  
The Erie Steel Construction Company  
The Hotchkiss Steel Products Company  
The A. W. French Company

*And Other Well Known Manufacturers***Southern Machinery & Supply Co.**  
Roanoke - 1 - Virginia**"All Kinds of Machinery"***REPRESENTING*

The Osgood Company  
Vulcan Iron Works  
Ingersoll-Rand Co.  
Chain-Belt Company  
The Novo Engine Co.  
Insley Manufacturing Co.  
Geo. Haiss Manufacturing Co.  
Curtis Pneumatic Machinery Co.  
Union Steam Pump Co.  
Littleford Bros.  
Orr & Semberwer

Contractors' Equipment in Stock in our Roanoke  
Warehouse.

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.



## DISTRIBUTORS OF CONTRACTORS' EQUIPMENT

## WASHINGTON

**A. H. COX & COMPANY**

1757 First Avenue, So. Seattle, Wash.

*Representing*

ERIE Steam and Gas-Air Shovels  
 REX Mixers and Pavers  
 NATIONAL Gas and Electric Hoists  
 WILLIAMS Clamshell Buckets  
 CONTINENTAL "Red Seal" Industrial Engines  
 BLYSTONE Plaster Mixers  
 RED STAR Wheelbarrows and Carts  
 SUPERIOR (Contractors) Saw Rigs  
 BARNES Power Pumps  
 WYOMING "Red Edge" Shovels

Members of Associated Equipment Distributors

**GELSBEEK ENGINEERING COMPANY**

Artic Building Seattle, Wash.

**REPRESENTING:**

Buckeye Traction Ditchers & Excavators  
 Plymouth Gasoline Locomotives  
 Williams Hammer Crushers  
 Chase Industrial Cars  
 Hardinge Cone Grinding Mills  
 Pumps, Compressors  
 Contractors Scientific Instruments

**NATIONAL MACHINERY AND EQUIPMENT COMPANY**

91 Connecticut St. Seattle, Wash.

*Representing*

Acme Road Machinery Company  
 Bay City Dredge Works  
 Bay City Ferry & Mach. Company  
 Littleford Brothers  
 Mead-Morrison Mfg. Company  
 S. Flory Mfg. Company  
 Richmond Forgings Corp.  
 Erie Machine Shops  
 Moore Speedcrane Company  
 Turbine Sewer Machine Co.  
 Ryan Manufacturing Corp.  
 Cameron-Spouse Mfg. Co.

**Pacific Hoist & Derrick Co.***Machinery and Equipment*

818 First Avenue South Seattle

*Distributor*

Minneapolis Steel & Machy. Co.—Twin City Gasoline Engines.  
 Blaw Knox Co.—Clam Shell Buckets, Steel Forms and Prudential Steel Buildings.  
 G. D. Whitcomb Company—Gas Locomotives.  
 Page Hgr. Co.—Scraper Buckets.  
 Buckets.  
 Pioneer Bucket Co.—Black Line Buckets.  
 Mundy Hoisting Equipment—Hoisting Machinery  
 Insley Mfg. Co.—Cone Placing Equip., Derricks.  
 Northwest Eng. Co.—Crawler Cranes, Shovels, Draglines.

Member: Associated Equipment Distributors

## WASH.—W. VA.

**GENERAL MACHINERY CO.**Engineers and Machinery Merchants  
SPOKANE, WASH.*Agents for High-Grade Equipment*

Gallon Iron Works & Mfg. Co.  
 Iowa Manufacturing Co.  
 The Jaeger Machine Co.  
 Hercules Motors Corp.  
 Chicago Pneumatic Tool Co.  
 De Laval Steam Turbine Co.  
 John A. Roebling Sons' Co.  
 Acme Road Machinery Co.  
 Speeder Machinery Corp.

Members: Associated Equipment Distributors

**HOFIUS-FERRIS EQUIPMENT CO.**

1118-1124 Ide Avenue

SPOKANE, WASHINGTON

*Distributors:*

Caterpillar Tractor Company  
 Killefer Mfg. Company  
 Erie Steam Shovel Co.  
 Plymouth Gasoline Locomotives  
 Rex Mixers and Pavers  
 Insley Mfg. Company  
 Sterling Wheelbarrow Co.  
 Wyoming Shovel Works  
 Williams Buckets

Member: Associated Equipment Distributors

**GENERAL EQUIPMENT CO. Inc.**

414 No. Fourth St., Clarksburg, W. Va.

*Representing*

JAEGER Mixers  
 REX-WATSON Wagons  
 STOCKLAND Graders  
 BARNES Pumps  
 AMERICAN Gasoline Locomotives  
 CURTIS Air Compressors  
 HERCULES Engines  
 STERLING Wheelbarrows  
 CAREY Expansion Joints  
 HERCULES Explosives and Blasting Supplies

**WEST VIRGINIA MINE SUPPLY CO.**

CLARKSBURG, W. VA.

*"Everything for the Contractor"***REPRESENTING**

Osgood—Steam and Gas Shovels and Cranes  
 Howe—Engines, Pumps and Hoists  
 Buffalo-Springfield—Steam and Gas Rollers  
 Rex—Pavers  
 Schramm—Portable Air Compressors  
 Western—Wheeled, Drags and Plows  
 Wood's—Molybdenum Shovels  
 Burch—Stone Spreaders and Unloaders  
 New Holland Machine Co. Crushers & Rolls  
 O. & S.—Boilers, Steam Engines & Hoists  
 Gould—Pumps, All Styles  
 Sterling—Wheelbarrows  
 Drill Steel, Jackhammers, Shovels, Tools, Supplies, etc.  
 Atlas Explosives and Blasting Supplies.



## WEST VIRGINIA

**BAILEY - HALL MACHINERY CO.**

20th St. &amp; B. &amp; O. R. R. Huntington, W. Va.

*Representing*

Caterpillar Tractor Co.  
LePlant-Choate Mfg. Co.  
Northwest Engineering Co.  
Blaw-Knox Company  
J. D. Adams & Company  
Athey Truss Wheel Co.  
Huber Manufacturing Co.  
A. W. French & Company  
D-A Lubricant Company  
Willamette Iron & Steel Works  
Wiard Plov Company

**BANKS-MILLER SUPPLY COMPANY**  
Huntington West Virginia*Representing*

AUSTIN-WESTERN Graders, Crushers, Drags	REX-WATSON Dump Wagons
BURCH Unloaders, Spreaders	INGERSOLL-RAND Compressors and Drills
CAREY Expansion Joints	RANSOME Concrete Mixers and Pavers
BATES Tractors & Parts	NEW HOLLAND Stone Crushers
FARQUHAR Engines & Boilers	MARION Steam & Gas Electric Shovels
HANDY Cement Sack Cleaners	NOVO Pumps
METAFORM Steel Road Forms	Drain Pipe
MUNDY Hoists	Reinforcing Steel

**LA LANCE EQUIPMENT COMPANY***Engineering and Sales*

747 Third Avenue Huntington, W. Va.  
RUSSELL GRADER Gravel Screening and Rock Crushing Plants  
MASSILLON Steam and Gasoline Shovels  
SMITH Pavers and Mixers  
PLYMOUTH Locomotives  
BUFFALO-SPRINGFIELD Rollers  
FATE-ROOT-HEATH Brick Plant Equipment  
METALWELD-WORTHINGTON Air Compressors  
FLORY Hoisting Engines, Cableways and Derricks  
R. H. BEAUMONT CO.

ARBER-GREENE Loaders Conveyors and Ditchers  
MORRIS Dredging Equipment  
OWEN Clamshell Buckets  
HUMPHRIES Pumps  
DAYTON-DOWD Industrial Pumps  
LOOKOUT Boilers  
CLEVELAND Rock Drills  
CLIMAX and CONTINENTAL Gasoline Engines  
INDUSTRIAL Cranes and Pile Drivers  
EASTON Cars and Industrial Equipment  
HIGHWAY Bridge Steel  
BYERS "Black Cat" Revolving Shovels

**THE PORTER SUPPLY COMPANY**

Huntington W. Va.

*Representing*

Erie Steam Shovel Co.  
Galion Iron Works & Mfg. Co.  
Monarch Tractor Corp.  
The Hug Company  
Domestic Engine & Pump Co.  
Sullivan Machinery Co.  
Koehring Company  
Connery & Company  
Hetzl Steel Form & Iron Co.  
Archer Iron Works

## WISCONSIN

**BOEHCK MACHINERY CO., INC.**

2404-08 Clybourn St., Milwaukee, Wis.

INSLEY—Steel Towers, Steel Derricks, Excavators  
T. L. SMITH—Concrete Mixers, Concrete Pavers  
ALLIS-CHALMERS—Crushers, Pumps, Motors, Compressors  
G. H. WILLIAMS—Clamshell Buckets  
L. P. GREEN—Drag Scraper Buckets  
NOVO ENGINE CO.—Gas Hoists, Engines, Pumps, etc.  
INGERSOLL-RAND CO.—Rock Drills, Compressors, etc.  
J. P. CURRY CO.—Wire Ties and Tools  
H. W. ROOS CO.—Hoosbors  
SYMONS—Column Clamps  
WAUKESHA MOTOR CO.—Industrial Power Units  
ROTARY SNOW PLOW—Snow King Plow  
LINK-BELT CO.—Conveyors  
PIONEER—Shack Line Buckets  
MEAD-MORRISON—Hoists  
STREICH—Wagons  
Gravel Pit Equipment, Gasoline, Steam, Electric Shovels and Cranes  
MEMBER ASSOCIATED EQUIPMENT DISTRIBUTORS

**CHADWICK BROS. CO.***CONTRACTORS' EQUIPMENT*

2430 CLYBURN ST. MILWAUKEE

Phone: West 7070

EYES BEARCAT Shovels, Ditchers, Skimmers and Cranes	B A B E E -GREENE Loaders, Trenchers, Portable and Permanent Conveyors
LEACH Mixers, Pavers	LEE Gravity Dump Bodies
HELTEL Batchers and Bins Steel Forms	BAKER Backfillers
OWEN Buckets	CHICAGO PNEUMATIC—Air Compressors and Tools

**Cunningham - Ortmyer - Company**

15 Michigan Street Milwaukee, Wis.

*DISTRIBUTORS*

Lakewood—Road Finishers, Subgraders, Chuting Equipment, etc.  
Butler—Bins and Measuring Devices  
Wyoming—Red Edge Shovels, Scoops and Picks  
MacWhyr—Wire Rope  
Wehr—Rollers, Power Graders  
Universal—Truck Cranes  
Hauk—Heaters  
Austin—Trenching Machines and Backfillers  
Union Iron Works—Piling and Tunneling Equipment  
Caray—Elastic Joints and Building Materials  
Little Red Wagon—Scrapers and Elevating Graders  
Northern—Conveyors and Bag Cleaners  
Goulds—Pumps of All Types  
Milburn—Carbide Lights  
American—Drag and Slackline Buckets  
Electric—Portland Rubber Tired Wheels, Trailers, Crawlers  
Hug—Road Builders' Trucks  
Wender—Concrete Mixers  
Little Giant—Cranes  
Member Associated Equipment Distributors

**DROTT TRACTOR CO., INC.**

Plankinton Arcade Building

Milwaukee

Wisconsin

*REPRESENTING*

"Caterpillar" Tractors—Caterpillar Tractor Co.  
Wausau Snow Plows —Hi-way Service Corp.  
Baker Maney Scrapers —Baker Mfg. Co.  
Big Red Snow Fence —Illinois Wire & Mfg. Co.

# DISTRIBUTORS OF CONTRACTORS' EQUIPMENT WISCONSIN

## ENGINEERS AND CONTRACTORS SUPPLY CO.

**Office:**  
228 - 3rd St.,  
Milwaukee, Wis.

**Warehouse:**  
West Allis,  
Wis.

### DISTRIBUTORS FOR WISCONSIN

Gelday Concrete Machinery Co.  
Blystone Manufacturing Co.  
O. K. Olmstead & Machinery Co.  
Hummel Manufacturing Co.

Complete Concrete Product Plant Equipment  
Complete Contractors' Equipment  
Milwaukee Stock

## HUNTER MACHINERY COMPANY

MILWAUKEE, WIS.

Our own office, shop and warehouse buildings at  
16th Street Viaduct near S. Canal St.  
Phone: Orchard 6580-1-2

CHAIN-BELT Mixers, Pavers  
CLYDE Hoists, Derricks  
BLAW-KNOX Buckets, Bins  
and Road Forms  
NORTHWEST Cranes, Shovels  
LESCHEN Wire Rope  
ATLAS Conveyors, Mixers  
PARSONS Trenching Machines  
SASGEN Derricks  
LE ROI Engines  
WESTERN Wheeled Scrapers  
CARBIC Lights  
SULLIVAN Compressors

WISCONSIN Power Units  
ATLAS Adjustable Shores  
RANSOME Concrete Chuting  
SYNTRON Electric Hammers  
BUFFALO-SPRINGFIELD  
Rollers  
HIGHWAY Trailers  
ORD Road Finishing Machines  
BARNES MFG. CO. Pumps  
SAUERMAN Draglines, Cable-  
ways  
JONES-SUPERIOR Saw Rigs  
AEROIL Burners

Members: Associated Equipment Distributors

## GEORGE H. MUELLER CO.

6092 Plankinton Arcade Bldg., Milwaukee, Wis.

### Representing

KOEHRING CO.—Concrete Mixers and Pavers, Cranes  
Shovels, Draglines and Subgraders.  
C. H. & E. MFG. CO.—Hoists, Pumps, Saw Rigs, Mortar Mixers  
and Elevator Cranes.  
METALWELD-WORTHINGTON—Portable Air Compressors  
HAUCK—Oil Burning Heaters & Thawers.  
KWIK-MIX—Tilting Concrete and Plaster Mixers.  
HOTCHKISS—Road, Sidewalk and other Steel Forms.  
JOHNSON—Portable Bins, Batchers.  
BEEBE—All Steel Hand Hoists.  
CLEVELAND—Rock Drills, Paving Breakers, Tampers and  
Spades.  
Freeman Truck Turntables

## Mullins Body & Tank Company

47th Avenue and Rogers Street  
MILWAUKEE, WIS.

### Wisconsin Distributors for:

WOOD-DETROIT Hydraulic and  
Mechanical Hoists, Automatic Gravity  
Bodies.

SAFTEE Hand Hoists and bodies.

Mead-Morrison Motor Truck Winches.

# CANADA

## Brown, Fraser & Co., Ltd.

Vancouver British Columbia, Can.

Equipment for  
Contractors, Loggers, Municipalities  
Mines, Railroads and  
Industrial Plants

### Representing

Galion Road Machinery—Cletrac Tractors

## DOMINION EQUIPMENT and SUPPLY COMPANY, Ltd.

145 Market St. Winnipeg, Manitoba

### Representing

Bucyrus Company  
Austin Manufacturing Co.  
Hauk Manufacturing Co.  
Hyde Iron Works  
Cleveland Tractor Co.  
London Concrete Machinery Co.  
Sauerman Brothers

## LONDON CONCRETE MACHINERY CO. LTD.

LONDON CANADA

### Representing:

Concrete Mixers [Tilters and Non-Til-  
ters]  
Concrete Block Machines  
Cement Brick Machines  
Hoisting Engines  
Novo Gasoline Engines  
Archer Tower Hoist Equipment  
Centrifugal, Diaphragm & Rotary Pumps  
EVERYTHING FOR THE CONTRACTOR

## MUSSENS LIMITED

Montreal, Canada

Toronto — Winnipeg — Vancouver

### Representing

Bucyrus Shovels	Vulcan Locomotives
Western Wheel Scraper Co.	T. L. Smith Company
Starling Wheelbarrow Co.	Elgin Motor Sweepers
Reading Chain & Block Corp.	Norton Jacks
Line Tractors	Marsh Hoists
Humboldt Pumps	Byers Machine Company
Pulsometer Pumps	Barber-Greene Company
Burch Spreaders	Morse Diving Apparatus
Union Pile Driving Machinery	Holtz Steel Forms

**Ingeniero Joaquin M. de Uriarte**  
**Avenida 5 de Mayo No. 1,**  
**Mexico, D. F., Mexico**

**Representing**

**Austin Mfg. Company**  
**Barber-Greene Company**  
**Clyde Iron Works Sales Company**  
**The Lakewood Engineering Co.**  
**The Thew Shovel Company**  
**The Universal Crane Co.**

**HOOVER EQUIPMENT COMPANY**  
**224 North Alabama Street**  
**INDIANAPOLIS, INDIANA**

**Representing**

**The Anthony Co., Inc.**  
**The Wehr Co.**  
**The Trackson Co.**  
**The Perry Co.**  
**Miami Trailer-Scraper Co.**  
**Universal Power Shovel Co.**  
**Willamette Iron & Steel Co.**  
**Whitehead & Kales Co.**

*We carry a complete line of road building and contractors' equipment*

## INDEX TO ADVERTISERS IN THIS ISSUE

This index is published as an aid to the reader, but the publishers assume no responsibility for errors or omissions.

Aberthaw Company.....	163	Buckeye Traction Ditcher Co. ....	15	Drott Tractor Co., E. A. ....	187
Acme Road Machinery Co. ....	146	Buffalo-Springfield Roller Co. ....	127	Dyar Sales & Machy. Co. ....	164
Aeroli Burner Co. ....	130	Buhl Co. ....	142		
Alabama Equipment Co. ....	151	Bunting Hardware & Machy. Co. ....	168	Eagle Wagon Works.....	138
Alamo Engine Co. ....	130	Burkhardt Co. ....	146	Ernest Bros. ....	185
Alamo Iron Works.....	134	Burnite Machy. Co. ....	158	Edeien & Boyer Co. ....	179
Alban Tractor Co. ....	162	Bureau-Clark Machy. Co. ....	157	Haismann Magnet Co. ....	9
Aldrich Pump Co. ....	142			Elias & Brother, Inc. G. ....	146
Alexander, Edgar.....	158	Camp Co., C. F. ....	178	Engineering Products Co. ....	154-159
Allegheny Equip. Corp. ....	180	Cardwell Co., Inc., H. W. ....	180	Engineers & Contr. Supply Co. ....	188
American Cement Machine Co. ....	134	Carey Co., Philip.....	114-115	Erickson Co., Inc., H. E. ....	166
American Hdw're & Equip. Co. ....	174	Carr & Company, Ted. ....	80	Erie Steam Shovel Co. ....	7
American Inst. of Steel Constr. ....	35	Cass, George D. ....	172	Ersted Mfg. Co. ....	124
American Machy. & Supply Co. ....	138	Cass & Co., Fred W. ....	175	Essick & Co. ....	153
American Saw Mill Machy. Co. ....	144	Caterpillar Tractor Co. ....	47	Euclid Crane & Hoist Co. ....	124
American Steel & Wire Co. ....	125	Cement Block Machy. Co. ....	144	Everett & Co., R. B. ....	184
American Steam Pump Co. ....	136	Cement-Gun Co. ....	119	Everhot Mfg. Co. ....	124
Anderson Tool & Supply Co. ....	164	Central Foundry Co. ....	111		
Arizona Tractor & Equip. Co. ....	152	Chadwick Bros. Co. ....	187	F-D Equipment Co. ....	150
Arkansas Foundry Co. ....	152	Chain Belt Company.....	48	Feenaghty Machinery Co. ....	178
Armstrong & Bros. Co., R. S. ....	158	Chicago Automatic Conveyor Co. ....	122	Pickelissen-Pinney Equip. Co. ....	168
Arnold Co., Inc., C. H. ....	181	Choctaw Culvert & Machy. Co. ....	183	Fink Co., John W. ....	155
Asheville Supply & Fdy. Co. ....	174	Cleveland Tractor Co. ....	61	Fireproofing Products Co., Inc. ....	172
Atlas Engineering Co. ....	139	Climax Engineering Co. ....	101	Fishback, D. E. ....	157
Austin Machy. Co., W. E. ....	158	Clinton & Held. ....	155	Fitzgerald, Paul.....	155
Austin-Western Road Machy. Co. ....	135	Clyde Co. ....	161	Flory Mfg. Co., S. ....	118
Avery, O. B. ....	168	Clyde Equipment Co. ....	178	Fraley, Lawrence V. ....	168
		Clyde Iron Works Sales Co. ....	103	French Co., A. W. ....	134
Bacon Co., E. R. ....	154	Coast Machinery Corp. ....	153	Fuchs Equipment Co. ....	140
Bacon Engineering Sales Co. ....	175	Collins Kay Machinery Co. ....	158	Fuller & Sons Mfg. Co. ....	164
Bailey-Hall Machinery Co. ....	187	Complete Machy. & Equip. Co. ....	172	Funkhouser Equipment Co. ....	168
Baker Mfg. Co. ....	142	Conard & Buzby.....	147		
Banker Road Machy. Co., W. D. ....	182	Conboy Co., John A. ....	179	God, Herbert.....	151
Banks-Miller Supply Co. ....	187	Concrete Machy. & Supply Co. ....	153	Gallon Iron Works & Mfg. Co. ....	136
Barber Asphalt Co. ....	192	Concrete Surf. Machy. Co. ....	130	Gardner-Denver Co. ....	150
Barber-Greene Co. ....	21	Conery & Co. ....	136	Garfield & Company.....	154
Barrett Co. ....	95	Continental Motors Corp. ....	35	Garlinghouse Bros. ....	153
Barret, Thos. ....	160	Contractors Equipment Co. ....	157	Gartner Co., F. W. ....	184
Bartlow Co., J. W. ....	183	Contractors Equipment Co., Inc. ....	164	Geijsbeek Engr. Co. ....	186
Bashford-McCord Corp. ....	173	Contractors Equipment Co. ....	170	General Equipment Co. ....	186
Bates Valve Bag Co. ....	129	Contractors Sales Co. ....	171	General Excavator Co. ....	2
Bay City Dredge Works.....	191	Cook Motor Company.....	146	General Machinery Co. ....	186
Beattie Machinery Sales Co. ....	164	Corby Supply Co. ....	168	General Utilities Co. ....	185
Becker, A. F. ....	171	Cornell Tractor Co. ....	155	General Wheelbarrow Co. ....	36
Beckwith Machinery Co. ....	180	Coulter-Hart Equip. Co. ....	157	Gibbes Machy. Co. ....	181
Benkart, H. W. ....	171	Cox & Company, A. H. ....	186	Gierke-Robinson Co. ....	160
Blaw-Knox Co. ....	136	Craven Co., E. F. ....	175	Giles & Ransome.....	180
Blystone Mfg. Co. ....	131	Cunningham, Ortmayer Co. ....	187	Gill Machinery Co. ....	156
Boardman Co., The.....	178	Curd Equipment Co., Geo. B. ....	175	Globe Machy. & Supply Co. ....	160
Boeckh Machy. Co., Inc. ....	187			Going Road Machy. Co., Inc. ....	151
Bond Co., The.....	163	Dallett Co., The.....	136	Good Roads Machinery Co. ....	44-45
Borchert Ingersoll Co. ....	167	D-A Lubricant Co., Inc. ....	126	Good Roads Supply Co. ....	165
Boston & Lockport Block Co. ....	142	Davis, Norris K. ....	151	Graham Brothers.....	105
Boyer, James F. ....	179	Davis Engineering Co., C. B. ....	151	Grier & Sons Co., R. D. ....	163
Brandsma Machy. & Supply Co. ....	161	Day & Maddock Co. ....	176	Green & Co., G. S. ....	173
Breed Equipment Co. ....	182	Dealers Equipment Co. ....	159		
Brewster & Williams, Inc. ....	174	Dealers Equip. & Implement Co. ....	183	Haim Mfg. Co., Geo. ....	138
Brigg-Weaver Machy. Co. ....	184	De Huff & Hopkins.....	179	Hale & Co., Wm. H. ....	166
Bright Sales Co., Inc., Graham.....	185	Dixon Crucible Co., J. ....	126	Hall, Frank E. ....	173
Brinker Supply Company.....	181	Dixoy, Inc. ....	149	Hardcock Wonder Drill Co. ....	137
Brooks Co., R. E. ....	172	Dobbie Foundry & Machine Co. ....	122	Harris, R. L. ....	182
Brookville Locomotive Co. ....	137	Dodge, C. R. ....	163	Harron, Rickard & McCous Co. ....	154
Brown Bevis Co., Inc. ....	153	Domestic Engine & Pump Co. ....	121	Hartvil Supply Co. ....	169
Brown, Fraser & Co. ....	188	Dominion Equip. & Supply Co. ....	188	Hatcher Co., S. T. ....	169
Brown, Thos. M. ....	162	Dopp & Co., J. W. ....	165	Havana Fruit Co. ....	156
Brown & Sites Co. ....	172	Dow Chemical Co. ....	126	Haverstick & Co., Inc. ....	174
Browning-Ferris Machy. Co. ....	184	Dravo Equip. Co. ....	173-176-179-181	Hawley Mfg. Co. ....	130
				Hedge & Mattheis Co. ....	162
				Hell Co., The.....	128

(Continued on page 190)

# INDEX TO ADVERTISERS IN THIS ISSUE

(Continued from page 189)

Heltzel Steel Form & Iron Co.	39	Miller Equipment Co.	174	Smith Co., T. L.	37
Hercules Motors Corp.	52	Mills & Lupton Supply Co.	182	Smith Engineering Works	87
Herr, Henry R.	179	Minneapolis Equipment Co.	166	Smith-Meadows Supply Co.	151
Highway Trailer Co.	132	Minnesota Equipment Co.	167	Smith Co., Stuart S.	155
Hill, Nicholas S.	147	Mitchell, Lewis & Staver Co.	179	Snares Corporation, Frederick	147
Hobbs, Inc., Lewter F.	185	Monarch Equipment Co.	169	Solvay Sales Corp.	107
Hofius-Ferris Equipment Co.	186	Moody, M. D.	157	Southeast Supply Co.	158
Honhorst Co., Jos.	138	Moore, A. B., Jr.	158	Southern Machy. & Supply Co.	185
Hooper Equipment Co.	180	Moore Equip. Co., H. W.	156	Southern States Equipment Co.	161
Hoppe, Geo. E.	185	Motor Power Equipment Co.	167	Spears-Wells Machinery Co.	129
Horter, J. Z.	156	Mueller Co., Geo. H.	188	Speeder Machinery Co.	13
Hotel Benjamin Franklin	138	Mullins Body & Tank Co.	188	Staley & Morris, Inc.	180
Hotel Knickerbocker	140	Mundy Sales Corp.	99	Standard Machy. & Equip. Co.	182
Howell, L. Z.	159	Mussens, Ltd.	188	Standard Oil Co. of Ind.	106
Hower, J. Shuman	174	National Caride Sales Corp.	149	Standard Oil Co. of N. Y.	144
Hubbard-Floyd Co., Inc.	173	National Machy. & Equip. Co.	186	Standard Power Equipment Co.	152
Huber Manufacturing Co.	119	National Supply Co., The	177	Standard Scale & Supply Corp.	23
Humphreys Mfg. Co.	128	Neely & Co., J. C.	175	Star Drilling Machine Co.	149
Hunt Road Machy. Co., Jeff.	182	Neptune Meter Co.	145	Steinberger Co., H. N.	156
Hunter Machy. Co.	165-188	Newark Concrete Pipe Co.	128	Sterling Wheelbarrow Co.	38
Hyland Co., R. H.	159	New England Impie.nent Co.	164	Stith Co., C. L.	177
Inslay Manufacturing Co.	27	Nixon-Hasselle Co.	182	Sullivan Machinery Co.	120
Interstate Machy. & Supply Co.	170	Noble Co., K. B.	156	Superior Supply Co.	159
Jaeger Machine Co.	146	Northern Conveyor & Mfg. Co.	19	Sutton-Orborne Supply Co.	174
Johns Equipment Co., E. W.	160	Northwest Equip. Co., Inc.	170	Templeton, Kenly & Co., Ltd.	124
Johnson, Roe L.	184	Norton Co., J. B.	17	Thew Shovel Co.	54
Johnson & Dealman, Inc.	170	Novo Engine Co.	130	Toledo Sales & Engine Co.	177
Johnston Bros., Inc.	122	O'Brien Co., Inc., Martin J.	181	Toledo Wheelbarrow Co.	93
Jones Co., C. H.	185	Ogden Machinery Co.	158	Tower Machinery Co.	176
J-T Tractor Co.	139	O'Neal Tool & Supply Co.	165	Trackson Company	41
Kelley Co., E. B.	173	O. K. Clutch & Machy. Co.	149	Trackson Pull-Crawler Co.	179
Kellogg-Burlingame Co.	166	Olsen, Ole K.	161	Truitt-IT Company	144
Kelly Spring Co.	175	Orton Crane and Shovel Co.	11	Trevor Co., H. B.	7
Kenney Co., G. C.	168	Pacific Flush-Tank Co.	149	Truscon Steel Co.	181
Keystone Driller Co.	43	Pacific Hoist & Derrick Co.	186	Tulley Equipment Co.	169
Kiesler Co., Jos. F.	140	Parsons Co., Inc., C. T.	49	Turner Supply Co.	152
Kinney Mfg. Co.	118	Patterson Co., Inc., C. T.	161	Turner, John D.	152
Kinney Standards, Inc.	146	Pattison Supply Co., W. M.	176	Tyler Co., M. B.	164
Knox Engineering & Equip. Co.	160	Peden Equipment Co.	176	Union Iron Works	144
Koshing Co.	17-60	Pegg, E. F.	176	Union Water Meter Co.	142
Kuhlman & Co., W. A.	125-177	Penna. Dixie Cement Corp.	113	Universal Hoisting Mch. Corp.	138
Lake Co., F. D.	166	Perrins Co., P. I.	163	Universal Power Shovel Co.	131
Lakewood Equipment Co.	169	Perry & Wilson Equip. Co.	169	Upper Peninsula Tra- tor Co.	166
Lakewood Engr. Co.	42	Phillips Tractor Co., G. C.	151	Uriarte, Joaquin M. de Ingeniero	189
La Lance Equipment Co.	187	Phillips & West, Inc.	171	U. S. Cast Iron Pipe & Fdy. Co.	23-143
La Plant Choate & Mfg. Co.	46	Phinney, Frank B.	163	Van Dora Iron Works Co.	135
Lane Equipment Co., T. J.	177	Pidgeon-Thomas Iron Co.	183	Van Keppel, G. W.	168
Latture Equipment Co., J. L.	178	Pioneer Tractors, Inc.	128	Van Keppel & Co., J. R.	177
Lauson Mfg. Co., John	133	Pittsburgh Machy. & Equip. Co.	181	Van Name, Eugene F.	172
Lawrence-Goodling Co., Inc.	152	Pittsburgh Testing Laboratory	159	Wallace & Tiernan Co., Inc.	141
LeRoi Company	97	Pope Equipment Co.	176	Wallace Equipment Co.	185
Lincoln Equip. & Materials Co.	169	Porter Supply Co.	187	Ward Co., Lee T.	180
Lindrooth, Shubart & Co.	155	Potts, Jr., & Company, J.	185	Warren Brothers Co.	120
Link-Belt Co.	31	Power Equipment Co.	160	Waterhouse, Clifford	167
Littleford Bros.	142	Queen City Supply Co.	175	Waterman Corp.	123
Llewellyn Inc., L. D.	157	Rabbitt, C. F.	169	Weber Implement & Auto. Co.	169
Lockett & Co., A. M.	161	Railsback, Leigh M.	153	Wemlinger, Inc.	144
Loggers and Contractors Machy. Co.	178	Ransome Concrete Machy. Co.	85	Waukesha Motor Co.	91
London Concrete Machy. Co., Ltd.	188	Raymer Hardware Co.	167	Western Block Co.	138
Louer Co., W. B.	159	Reed & Duerker, Inc.	159	Western Contractors Supply Co.	159
Louis, John C.	162	Richards & Hirschfeld, Inc.	173	Western Material Co.	182
Louisiana Rd. Machy. Co.	161	Riddell Co., W. A.	149	Western Supply Co.	170
Lowe-Peters Equip. Co.	159	Riechman-Crosby Co.	183	West, Payne G.	165
Lufkin Rule Co.	113	Rogers Bros. Corp.	137	West Virginia Mine Supply Co.	186
Lyons Machinery Co., Inc.	152	Rome Mfg. Company	120	Wettlauffer Bros.	165
McClelland, R. T.	154	Roshalt Co., T. W.	167	Wayne Supply Co., R. C.	161
McCracken-Ripley Co.	178	Rossiter Co., Edgar A.	147	Wheeler Murray Co.	171
McDonald & Burgen	157	Ruane Machinery Co.	181	Whitcomb Co., Geo. D.	123
McKiernan-Terry Drill Co.	25	Russell Engineering Co.	147	Wilkins, J. D.	175
McNeilly Machinery Co.	176	Russell Grader Mfg. Co.	134	Willamette Iron & Steel Works	134
Mack Trucks, Inc.	132	Safety Gas Main Stopper Co.	142	Williams Co., W. W.	177
Malvese & Company, Geo.	172	Sampson Co., Geo. H.	163	Williamsport Wire Rope Co.	116-117
Mamer Company, The	164	Saugen Derrick Co.	136	Wilson, J. Walker	178
Martin Machinery Co., E. A.	167	Sauermaier Bros.	144	Wilson Tank & Culvert Co.	184
Meryll nd Truck Equ p. Corp.	162	Schaefer Wagon Works, Gustav	121	Wilson-Wessner Wilkinson Co.	183
May, W. B.	711	Schilling Co., I. E.	157	Witte Engine Works	139
Meadows, Inc., W. R.	126	Seabrook Co., Inc., C. F.	170-173	Wolverine Concrete Machy. Co.	165
Memphis Tractor Co.	183	Service Equipment Co.	180	Wood Hydraulic Hoist & Body Co.	133
Merit Machinery Co.	150	Service Supply Co.	180	Woodward, Wight & Co., Ltd.	162
Meyer Co., Henry H.	156-162	Shannon & Co., Jacob J.	180	Wormington & Powers, Inc.	162
Miami Trailer-Scraper Co.	146	Sheehan & Co.	184	Yancey Bros.	158
Michigan Equipment Co.	166	Shepherd-Crook, Inc.	154	Yancey Tractor Co.	158
Michigan Highway Equip. Co.	166	Shreveport Machy. & Sales Corp.	162	Young & Van Supply Co.	152
Milburn Co., Alex.	150	Slade Brothers	171	Ziegler & Co., Inc., Wm. H.	167
Milburn Machy. Co.	177	Smith-Booth-Usher Co.	154-155	Ziegler Machy. Co., Geo. W.	181
		Smith & Co., Geo. F.	169		

For Directory of Consulting & Contracting Engineers, Landscape Architects, Etc.,  
see pages 147, 148, 149.





# 600 ft. in 9 hours!

The BAY CITY Tractor Shovel made this record on a 12-in. pipe line trench on Staten Island—digging the trench  $4\frac{1}{2}$  feet deep. It averaged 500 ft. a day on the job.

When you consider the speed of this machine and how quickly it can be converted to shovel, clam-shell, dragline or backfiller—you can see its profit-possibilities for contractors. All kinds of jobs can be handled with it at a profit, where a big shovel would not be economical. Besides, it can go where the big shovels can't.

Live contractors in all parts of the country are making fat profits with it, where they could not have done so otherwise.

Much of the same could be said of the BAY CITY 16-B Convertible Excavator—a fast-working heavy skimmer—ditcher  $\frac{3}{4}$ -yard, 20-ton full-crawlers, of course.

*Write for specifications of both*

## BAY CITY DREDGE WORKS

New York Office: 302 Broadway

CRANES  
POWER SHOVELS  
DREDGES

BAY CITY, MICH.

When writing to advertisers please mention the CONTRACTORS AND ENGINEERS MONTHLY—Thank You.



## Leading engineers recommend IROQUOIS Steam-Jacketed Pipe, Fittings and Pumps

They say the Iroquois system is the most efficient ever devised for pumping asphalt and other viscous materials that will not flow at atmospheric temperatures. They know from experience that it is quick, safe and economical.

Here are some of the distinctive features of the Iroquois Steam-Jacketed Pump that make it so desirable:

Minimum number of working parts in contact with material being pumped.

Large wearing surfaces to reduce wear.

Large, straight passages for liquid being pumped.

Simplicity of construction insures low maintenance cost.

Ease of operation with no skilled attention.

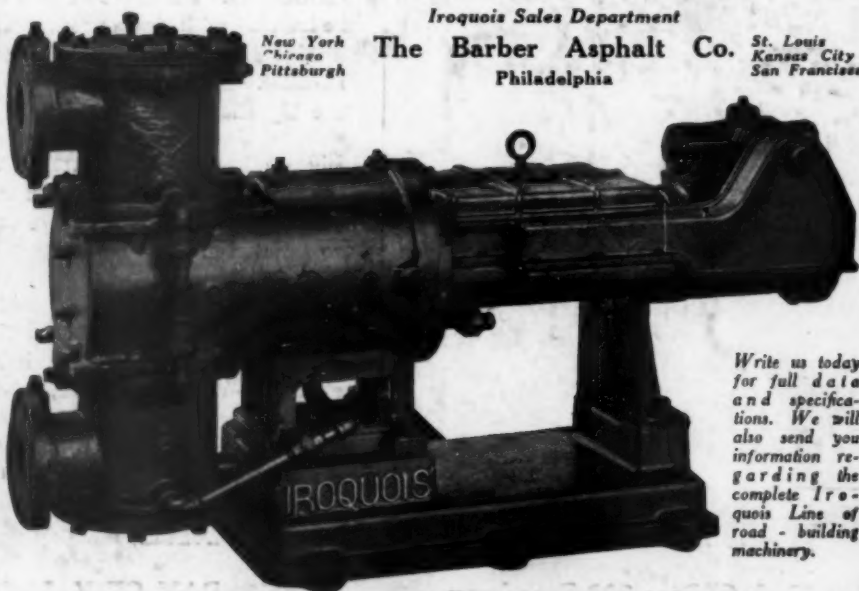
Steam jackets cover all moving parts—pump can be started and stopped at will without cleaning out.

Perfect accessibility of all wearing parts.

No springs or small, easily broken parts in valve chambers.

Handles successfully viscous material containing large quantities of foreign matter without undue wear or operating troubles.

Iroquois Steam-Jacketed Pipe, Fittings and Pumps are specially designed to give the utmost satisfaction in asphalt, oil and coal-tar refineries, and plants manufacturing prepared roofing, gas, chemicals, starch, glucose, molasses, fatty acids, etc.



*Iroquois Sales Department*

**The Barber Asphalt Co.**  
Philadelphia

New York  
Chicago  
Pittsburgh

St. Louis  
Kansas City  
San Francisco

Write us today  
for full data  
and specifica-  
tions. We will  
also send you  
information re-  
garding the  
complete Iro-  
quois Line of  
road-building  
machinery.

Yes—we would like you to mention the CONTRACTORS AND ENGINEERS MONTHLY.

